

## STIC Search Report Biotech-Chem Library

#### STIC Database Tracking Number: 117384

TO: Manjunath N Rao

Location: REM/3B81/3C70

**Art Unit: 1652** 

Monday, March 29, 2004

Case Serial Number: 09/847392

From: Edward Hart

**Location: Biotech-Chem Library** 

**REM-1A55** 

Phone: 571-272-2512

edward.hart@uspto.gov

#### Search Notes

Examiner Rao,

Here are the results of the search you requested.

Please feel free to contact me if you have any questions.

**Edward Hart** 



#### STIC-Biotech/ChemLib

From:

Rao, Manjunath N.

Sent:

Monday, March 22, 2004 10:57 AM

To: Subject: STIC-Biotech/ChemLib Sequence search request for 09/847,392

From: Manjunath N. Rao

Art Unit 1652, Room 3B81 Mail Box in Room 3C70

Phone: 272-0939

Date: 3-22-04

Please search the following as soon as possible for application with serial number

## 09/847,392

- SEQ ID NO: 1 and nucleotides 557-1171 of SEQ ID NO:1 against all commercial nucleic 1. acid databases, issued patents/published applications database and pending application database. Please provide a print of all results
- SEQ ID NO: 2, against all commercial amino acid databases, issued patents/published 2. applications database and pending application database. Please provide a print of all results.

If you have any questions please call me at the above phone number.

**Thanks** 

Manjunath N. Rao Art Unit 1652, Room 3B81, Mail Box in Room 3C70, Remsen Building, USPTO

Searcher: Phone: Location: Date Picked Up: Date Completed: Searcher Prep/Review Clerical: Online time:\_

TYPE OF SEAR **NA Sequences:** AA Sequences: Structures: Bibliographic:\_ Litigation: Full text: Patent Family: Other:\_

VENDOR/COST (where applic.) STN: DIALOG:

Questel/Orbit: DRLink: Lexis/Nexis:

Sequence Sys.: WWW/Internet: Other (specify): 400, Dulany St. Alexandria, VA. Phone: 571-272-0939

414

Searcher:
Phone:
Location:
Date Picked Up:
Date Completed:
Searcher Prep/Review:
Clerical:

Online time:\_\_\_

# TYPE OF SEARCH: NA Sequences: AA Sequences: Structures: Bibliographic: Litigation: Full text: Patent Family: Other:

VENDOR/COST (where applic.)
STN:
DIALOG:
Questel/Orbit:
DRLink:
Lexis/Nexis:
Sequence Sys.:
WWW/Internet:
Other (specify):

Lending Nucleic Acid and Pending Amino Acid database searches generate two sets or results each of the Pending databases have been split into two parts to reduce the amount of time required for their daily updates. This results in more machine time being available for processing searches. Searches run against the Nucleic Acid Pending database produce two sets of results, with the extensions .rnpm and .rnpn Searches run against the Amino Acid Pending database produce two sets of results, with the extensions .rapm and .rapn Because they contain data that is confidential, the results of Pending database searches should not be left in the case .



# STIC SEARCH RESU

### **Biotech-Chem Library**

Questions about the scope or the results of the search? Contact the searcher or conta

Mary Hale, Information Branch Supervisor 571-272-2507 Remsen E01 D86

/0	luntary Results Feedback Form
Þ	I am an examiner in Workgroup: Example: 1610
A	Relevant prior art found, search results used as follows:
	☐ 102 rejection
	☐ 103 rejection
	Cited as being of interest.
	Helped examiner better understand the invention.
	Helped examiner better understand the state of the art in their technolog
	Types of relevant prior art found:
	☐ Foreign Patent(s)
	☐ Non-Patent Literature
	(journal articles, conference proceedings, new product announcements etc.)
4	Relevant prior art not found:
	☐ Results verified the lack of relevant prior art (helped determine patentability).
	Results were not useful in determining patentability or understanding the inventi
or	mments:

Drop off or send completed forms to STIC/Biotech-Chem Library Remsen Bldg



```
March 28, 2004, 14:04:39 ; Search time 5020.17 Seconds
  (without alignments)
  10360.543 Million cell updates/sec
                                                                                                                                                              1 agaaataatgtggagatcgc.....atgtcggatgcggcgtaaac 1200
                                                                                                                                                                                                                                                           6940544
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                 3470272 segs, 21671516995 residues
                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                            Post-processing::Minimum Match 0%
:Maximum Match 100%
:Listing first 45 summaries
                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                        IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em htg hum: *
em htg inv: *
em htg inv: *
em htg mus: *
em htg rod: *
em htg rod: *
em htg yrt: *
em htg orther: *
em htg orther: *
em htg orther: *
em htg orther: *
                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                   US-09-847-392-1
1200
                                                                                                                                                                                                                                                                                                                                                                                           gpbba.
gpbor.
gpbor.
gpbor.
gpbbr.
gpbbr.
gpbr.
gpbr.
gpbr.
gpbr.
gpbr.
gpbr.
gpbr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_hum:
em_in:
em_om:
em_ov:
em_ov:
em_bat:
em_pi:
em_pi:
em_pi:
em_pi:
                                                                                                                                   Title:
Perfect score:
Sequence:
                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                   Database :
                                                                                                                                                                                                                                 Searched:
                                                                                  Run on:
```

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	781 Seques	īž	75	E4 6	0 0	67	69	7.00	4 a	2 4	74	96	14	27.0	13	Ξ C	133 Sequ	9 6	.59 Yer	.22 Sequ	137 HOTE 185 Mus	AC010537 Homo sapi	33 Mus	.66 Seq	90,5	00 Vibrio	30 Vibrio v	<b>80</b> O	32	iuat 174	137 Pseu	OS PSeu	74 PB		linear PAT 17-DEC-2001				ovna., entinovna. and	bacterium escherichia coli
,	ID	AR172781 F41573																												AR375232					ALIGNMENTS	. i	nt US 6303348.	7 / 77		Zakataeva,N.Pavl Balareova,A.Val	ich confers on
í	Match Length DB	1200	00.0 1231	00.00	9.1 91414	8.3 11509	5.5 318703	4.0 301566	2.9 258050	166662 6.2	2.7 96086	8.2 265383	7.5 10253	1.4 13301	0.1 256373	8.6 10592	6.9 1576	4.8 417	2.6 645	0.1 199050	4.8 1041	4.5 214911 2.5 268294	0.2 214911	9.4 206758 7 7 62274	7.3 263	6.0 63847	3.8 199938 3.8 299938	3.5 245560	3.0 288108	2.1 1038	11.5 110000 2	9.4 10475	.0 313518	3 303226		נפרכרו	quence 1 from	AKI/Z/BI.i GI:1/912 Unknown.	Ġ.	<pre>1 (bases 1 to 1200) Livshits, V. Arkadievich., Aleoshin, V. Venyamiovich.,</pre>	knmakova, 1. Lvovna A coding for prot
	No. Score	120	120	120	118	7 1159	8 1146.	1128.	0 754.	11 754.	3.0	14 69	15 69	16 61	18 600.	9 582.	20 56	22 41	23 391.	361.	6 297.	7 294. 8 270.	9 24	0 233.	32 207.	3 191.	4 165. 5 165.	36 162.	7 15	9 144.		112.	3 107.	45 87.		RESULT 1 AR172781	NON		ORGANISM	REFERENCE 1 AUTHORS Liv	TITLE DNA

	RESULT 2 E41573 LOCUS LO	FEATURES FT CDS  (557)(1171).  FEATURES  Location/Qualifiers  11200  /organism="Escherichia coli" /mol_type="genomic DNA" /db_xref="taxon:562"  ORIGIN  Query Match  Query Match  Aches 1200; Conservative 0; Mismatches 0; Indels 0; Gaps  Matches 1200; Conservative 0; Mismatches 0; Indels 0; Gaps  Oy  1 Adaaraardrogadarcococcocarcoaardroccaca 60  1 Adaaraardrogadarcococcacacacacardraraaraccaca 60  Oy  1 Adaaraardright
resistance to L-homoserine and method for producing L-amino acids  Patent: US 630346-1 16-OCT-2001;  Location/Qualifiers  10.1200  /organism="unknown" /mol_type="unassigned DNA"  Query Match Best Local Similarity 100.0%; Score 1200; DB 6; Length 1200; Best Local Similarity 100.0%; Pred. No. 0;  Matches 1200; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  Matches 1200; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  Organism="unknown"  QV 1 AGAAATAATGAGGATGGCACGCCCATCGAATGGCCAGTATAAGGGTTTACGCCAC 60  Db 1 AGAAATAATGATGGAGATCGCACGCCCATCGAATGGCCAGAATAATAAGGTTTACGCCAC 60  CO	121   CGATTAACATGCCCGAGATGGCTAACAGGCGACGGAACGTCCCTGCCCGCGA	0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0

8 g ò g ò g 8 임 ò g ð

```
PAT 31-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 AGAAATAATGTGGAGATGGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301 CGAAAACGGACAAAGGGCACCGGAATGTCATCCACACAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 AGAAATAATGTGGAGGATCGCACCGCCCATCGAATGTGCCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGTCGATGATTAAGACATCAAACCCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1231;
                              1231 bp DNA linear for producing amino acid.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .1231
/organism="Escherichia coli"
/mol_type="genomic DNA"
/db_xref="taxon:562"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 100.0%; Score 1200; Best Local Similarity 100.0%; Pred. No. 0; Matches 1200; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (557). .(1171)
Location/Qualifiers
                                E48927
Novel gene and process for
E48927
E48927.1 GI:18627996
JP 2000189177-A/1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
RESULT 3
E48927
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAAATAATGTCGGATGCGGCGTAAAC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGT 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGAT 1080
                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACACCGGGAGTICATCATGACCTTAGAATGGTGTTTGCCTACCTGCTGACATCGATCAT 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               960
                                                                                                                                                                                                                                                                                                                                                                                                                      TITITITIAGCGIGCCIGACACACGCIGCGACAGIAGCGIATIGIGGCCACAAAAIAGAC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACACCGGGAGTTCATCATCATCATGCTTAGAATGGTGTTTGCCTACCTGCTGACATCGATCAT 600
               CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                CGAAAACGGACAAAGCGCACCGGAAAGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGTTGGCGTGGGGTTGGGACGCTATTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGGCGCGCGTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCT
                                                            TGGTCGATGATTAAGACATCAAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                       TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                           TITACGIAGCICICAATACGCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGCG
                                                                                                                                                         TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG
                                                                                                                                                                                                                                                         TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAAAGGGGTTTTCTCTTTGTT
                                                                                                                                                                                                                                                                                                                                                      receasirititisciscisaaaaararessiaareiseereritaaaeeagiaaaares
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCATGCCGCAACAGCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGAT
                                                                                                                                                                                         CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                         TCCCAGTCTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCAGGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGTTGGCGTGGGGTTGGGACGCTATTTTCCCGGCTCAGTGATTGCGTTTGAAGTGTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTGACCTTAAATCGCCTGCCCTCTACTCACTCGCGTCGACATTTGTTCCAGCGCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAAGGACCAAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTCGGCTCGTTGTTTATGCTGGT
CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1081
                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1141
                             121
                                                            181
                                                                                           181
                                                                                                                           241
                                                                                                                                                         241
                                                                                                                                                                                         301
                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
```

g

요 ò g

ò

d

ò g à

ò g ò d ò ద  $\delta$ g ð g ò g à g ò

ö

9

180

361

 $\dot{\circ}$ 20 δ ВÞ ò 5 C ò d

```
9
                                                                                                                                                                                                                                      0
                                                                                                                                                                                                            8
                                                                                                                                                                                                           Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1200; Conservative 0; Mismatches
organism="Escherichia"
                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                    CDS
                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                             \dot{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAATAATGTCGGATGCGGCGTAAAC 1200
                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                         960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
            480
                                    480
                                                                540
                                                                                        540
                                                                                                                 900
                                                                                                                                           600
                                                                                                                                                                      9
                                                                                                                                                                                              999
                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                              GTGGGCAGGCGCGCGTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCTGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGT
                                                                                                                                  ACACCGGGAGTTCATCATGACTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                TTATCCGGCCGCGTGTTTTTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                                                                                                                                                                                                           GTGGGCAGGCGCGCGCTACTTACTTTGGCTGGGAATCCAGCAGTGGCGCGCCCCTGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITICIONATOLICACCAATCCCCAAAGIAITICIOLITICIOCCGCGCCCTAITICCCCCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCATGCCGCAACAGCGGCAACTGATGCGTATATCGTGCTCGGCGTCACAATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGAGGGCTGTTAGCATCGGCGAGGCATGCGTGAAAAAATAATGTCGGATGCGGCGTAAAC
                                                                                     TITITITAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCCACAAAATAGAC
                                                                                                                ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                   TITAACGCTGTCGCCAGGCTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                             TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                           TGGTTGGCGTTTGGGACGCTATTTTCCCCCTCAGTGATTGCGTTTTGAAGTGTTTGAA
                                                                                                                                                                                                                                                                                                                                                                                   AATTGACCTTAAATCGCTGGCCTCTAATCGCGTCGACATTTGTTCCAGCGCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                               AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCGTATTTCCGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTCGATATTATTGTGATGGTTACGCCACCTTGCTCAACGGATTGCTCTATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAAAGGACCAAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT
         TCCCAGTCTTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAAACCACGTAAAATCGT
                                   TITITITAGGGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGGCACAAAATAGAC
                                                                                                                                                                                                                      TTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1141
                                  421
                                                                                     481
                                                                                                                                        541
                                                                                                                                                                   601
                                                                                                                                                                                           601
                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
         421
                                                           481
```

-윰, 강

8 8

qq

Db

ò d δ

ò

Ωþ

g

ò ద ò d

ò

```
Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                              and
                                                                                                                                                                                                Tokhmakova, I.L.
                                                                                                                                                                                         Belareva,A.V., Aleshin,V.V., Livshits,V.A., 'Zakataeva,N.P.
Zakataeva,N.P.
Sakataeva,N.P.
Sakataen and method for producing 1-amino acids patent: EP 1013765-A 1 28-JUN-2000;
AJINOMOTO KK (JP)
Location/Qualifiers
L. 1221
                                1231 bp
EP1013765.
                                                                                                                                                             Enterobacteriaceae; Escherichia
                                                                                                             Escherichia coli
Escherichia coli
Bacteria; Proteobacteria;
                                                                              AX030175.1 GI:10190392
                             AX030175
Sequence 1 from Patent
AX030175
RESULT 4
AX030175
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                           FEATURES
```

16-SEP-2000

PAT

linear

DNA

```
ö
                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          840
                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                              AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rrraceracercaaracececeeecaareacraceaceeeceercareererere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTTTTAGCGTGCCTGACACAACGCTGCGACAGTAGCGTATTGTGGCACAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTTTAGCGTGCCTGACACACACGCTGCGACAGTAGCGTATTGTGGCCACAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACACCGGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541 ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                            GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  regregargarrangacarcananacececanangganegerearangecengreegearar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGGTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           receasterringersersaacaressiaarerseererraaacesessaaresr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATCCGGCCGGTGGCGTCTATTGCTGGCTTCAGACCGGACTGGCGATTCATGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGTTGGCGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGTCGATGATTAAGACATCAAACCCCCAAATGGAACAGGTCATAGGCCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITACGIAGCICICAAIACGCCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCCAGTCTTTTTGCTGCTGAAACATCGGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTATCOGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       restresceresestressacecratriticscestratrescerresastresas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGGCAGGCGCGCCTTACTTGGCTGGGAATCCAGCAGTGGCGCGCCCCTGGTGC
                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                              Length 1231;
                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음 중
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
```

g ò 임 ò 임 δ 셤 ò 원 ò

ò

```
On May 29, 1995 this sequence version replaced gi:148169. This sequence was determined as part of the E. coli Genome Project (Frederick E. Blattner, director) at the University of Wisconsin-Madison. The entire sequence was independently determined from E. coli MG1665. Overlaps and conflicts with other sequence determinations are annotated. Reference [1] describes the original sequence determination of all 4008 by sequence. References [2], [3], and [4] describe subsequent corrections and/or updates to that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAA67566.1"
/db_xref="G1:148170"
/translaterorich="MAH78RHNEFSIGASASLWECMLNQWLGRLYQNODAHTGLQFEA
Atranslaterorich="Transprederssolicyfthalytsapsklkgdlnyl
RLEWGPDFQQHEAGLIGADEVPILTTSSAETAQOGIAMLNGCTWLPVSWARKKGGLHT
VVDSTTLSRPLYAIWLQNSDKNALIRDLKXINVLDEVY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /transl_table=11
/protein_id=!AAA67567.1"
/db_xref="GI:148111"
/translation="MDTELLKTFLEVSRTRHFGRAAESLYLTQSAVSFRIRQLENQLG
                                                                                                                                                                                                                                                                                                                                                           /sub strain="MC1655"
/db xref="taxon:562"
/db xref="taxon:562"
/map="bpl at 3974 kb; 84.7 minutes"
/clone lib="lambda library of Daniels and Blattner"
/note="This sequence comprises the following lambda clones: DBSG(EC15-116), DDSG(EC13RM4), DD854(EC15-177), DD856(EC19RM8), DD856(EC17-18), DD866(EC17-18), DD867(EC17-21), DD864(EC27-16), DD867(EC27-860). M13mpl9 or Janus vectors were used for
         ecoli@genetics.wisc.edu; Phone: 608-262-2534; Fax:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ment(1. .4899)
"corresponds to M37337 (1. .4900)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (1. .200)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="CGSC No. 18010; possible pssR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of 81 degrees"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   586. .724
/note="predicted bend of 77 degrees"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               177. .205
/note="terminator-like sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l. .339
'note="corresponds to V00349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .200
/note="corresponds to K02846
                                                                                                                                                                                                                                                                                                coli"
                                                                                                                                                                                                                                                                                           /organism="Escherichia of mol type="genomic DNA" /strain="K-12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .5863
/note="clone EC15-116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            253. .396
/note="predicted bend
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (703. .1104)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement (703. .1104)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement (266. .862)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (266. .862)
                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /function="unknown"
'codon start=1
'transT table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="aspT"
/note="CGSC No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="CGSC No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complement (1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="f133"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        subcloning."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="trpT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'gene="trpT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="f198"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .o. .86
/gene="aspT"
                                                                                                                                                                                                                                                                             .91414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95. .170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note=
                                                                                                                                                                                                                               sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 terminator
                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                       FEATURES
                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                          1080
                                                                                                                                                                                                                                                                                                                                                                                                                                   1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ECOUW85 91414 bp DNA linear BCT 29-MAY-1995 E. coli genomic sequence of the region from 84.5 to 86.5 minutes. M87049
                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                961 CATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGT 1020
                                                                                                                                                                                                                                                                                                                                                                                 derdeararrarrereardearderraceccaccerrecreaacearrecreardear 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1141 GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAATAATGTCGGATGCGGCGTAAAC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141 GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAATAATGTCGGATGCGGCGTAAAC 1200
                              840
                                                                       900
                                                                                                                                                                                                          960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Divises 1 to 91414)
Plunket.G. III, Burland,V., Daniels,D.L. and Blattner.F.R.
Analysis of the Escherichia coli genome. III. DNA sequence of the region from 87.2 to 89.2 minutes
Nucleic Acids Res. 21 (15), 3391-3398 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriales,
Enterobacteriaceae, Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (12-FEB-1992) Donna L. Daniels, Laboratory of Genetics,
University of Wisconsin, 445 Henry Mall, Madison, WI 53706, USA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
GGTCGATATTATTGTGATGGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                              1081 TARAGGACCARAAGCAGATGAAGGCGCTGAATAAGATTTTTCGGCTCGTTGTTTATGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1081 TAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTTCGGCTCGTTGTTTATGCTGGT
                                                                       AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGT
                                                                                                               841 AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTGGTTCCAGCGCGCAGT
                                                                                                                                                             TITIGIGAAICTCACCAAICCCAAAGIAIIGIGITTTCIGGCGGCGCGTAIIICCGCAAII
                                                                                                                                                                                                   TTTTGTGAATCTCAATCCCAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATT
                                                                                                                                                                                                                                                                                           961 CATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Daniels, D.L.
Analysis of the Escherichia coli genome. IV. DNA sequence of region from 89.2 to 92.8 minutes
Nucleic Acids Res. 21 (23), 5408-5417 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lazar, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 (bases 1 to 91414)
Blattner, F.R., Burland, V., Plunkett, G. III, Sofia, H.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Daniels,D.L., Plunkett,G. III, Burland,V. and Blattner,F. Analysis of the Escherichia coli genome: DNA sequence of from 84.5 to 86.5 minutes
Science 257 (5071), 771-778 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 (bases 1 to 91414)
Rudd, K.E., Sofia, H.J., Koonin, E.V., Plunkett, G. III,
Rouviere, P.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              new family of peptidyl-prolyl isomerases rends Biochem. Sci. 20 (1), 12-14 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5 (bases 1 to 91414)
Daniels, D.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 91414)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M87049.1 GI:836656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Escherichia coli
Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92358234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95184296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8346018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         379743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3265357
                                                                                                                                                                                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                                                                                                                        1021
                            781
                                                                                                                                                             901
                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
ECOUW85/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
```

```
Indels
                                                                                                                                                                                              .
0
                                                                                                                                                                     1;
                                                                                                                                                                     DB
                                                                                                                                                                   Score 1189; D
Pred. No. 0;
0; Mismatches
                                                                                                                                                                   99.1%;
ilarity 99.9%;
Conservative
                                                                                                                                                                                  Similarity
                                                                                                                                                                     Query Match
Best Local Simil
Matches 1200; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62177
                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61997
                                                                                                    gene
                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원 중 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <del>a</del>
                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    $ B $
                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                              /genee="10.16"
/function="unknown"
/note="similar to Mg chelatase subunit of Rhodobacter
capsulata"
/codon start=1
/transI_table=11
/protein_id=#AAA67569.1"
/brotein_id=#AAA67569.1"
/db xref="c1:148173"
/translation="MHIMVIQGGLMSLSIVHTRAALGVNAPPITVEVHISKGLPGLIM
VGLPETTVREARDNYRASAIINGSVEPRAKTITINLAAPADLPREGGRYDLPIAALLAA
SEQITANKLDEYELVGELATGALRCYPGAJSSATEALKSGRYDLPIAALLAA
SEQITANKLDEYELVGELATGALRCYPGAJSSATEALKSGRYLIPIAAALLAA
SEQITANKLDEYELVGELATGALRCYPGAJSSATEALKSGRYLIPIAABLYGKGRRQPF
RSPHHSASLTAAVGGAJEPPEDERFERRTLDALRESTEARDLING
LSRTPAKITYPARFQLVARANESPTGRYGGNHRCTPEDELBEFERRTLDALRESTEBGGIH
LSRTPAKITYPARFQLVAAMDSSPTGHYGGNHRCTPEOTLRYINGLSGPFLDRFDLE
LBIPLPPPGILSKTVVPGESSATVKQRVMAARERQFKRQNKLNAMLDSPEIRQFCKLE
SEDAMMLEGTTLIHLGGLSTRAMQRLLKVARTIADIDQSDIITTROHLQBAVSYRAIDRLL
JOUNTALIA"
                                                                                                                                                      /codon_start=1
/transl_table=11
/protein_id="MAA67568.1"
/db_xref="GI:148172"
/transl=ton="MAB88TTURXFDNKHYPRGFSRHGDFTIKBAQLLERHGYAFNE
LDLGKREPYTEEREKFYVGSREREFYTEABRYWSKYMTRIKREKRFHTLSAVNRRLK
VLKTTFILTINKKGEMPFFYVSSFCRWMSKRSIAR"
VNLFTRHRNNIRLTAAGEKLLPYAETLMSTWQAARKRWRIPHDITSFLSVPAPRCGNV
CLISGWDACIKIRMPIQAYSSKRELPNGSLW"
complement (1136. 1165)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Some case no 603; inactive in wild-type E. coli K12"
Codon start=1
/ranal_table=1.
/promosi_acetchydroxy acid synthase II, large subunit"
/protein_id="AAA67571.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon start=1
'transI_table=11
'product="livGMEDA operon leader peptide"
product id="AAAA7570.1"
protein id="AAAA7570.1"
'translation="MTALLRVISLVVISVVVIIIPPCGAALGRGKA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .9456) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .402)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .341)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     287. .3433
note="predicted bend of 79 degrees"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "note="promoter matrix score of 74"
3336. 12791
5336. -3737
5336. -3737
                                        /note="promoter matrix score of 63" 1151. 1179
                                                                     note≃"promoter matrix score of 57"
[223. .1636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1336. .3676
note="corresponds to M11651 (1.
                                                                                                                                                                                                                                                                             /note="terminator-like sequence"
complement(1585, 3135)
/gene="f516"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               379. 5721
note="4700290, ECILVX(1. .2343)"
458. .3556
gene="ilvL"
                                                                                                                                                                                                                                                                                                                              complement (1585. .3135)
                                                                                    1223. .1636
/gene="0137"
1223. .1636
/gene="0137"
/function="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3696. .4679
/gene="ilvG"
                                                                                                                                                                                                                                                          562. .1586
gene="o137"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       458. .3556
gene="ilvL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   696. .4679
gene="ilvG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                           terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    promoter
                              promoter
                                                         promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                              CDS
```

62478 62418 62358 62298 62238 62178 61878 62118 62058 62598 61998 /db\_xref="G1:148175"

Ltanslatton="MGGAGWVHALEAQGWTVFGYPGGAIMPVYDALYDGGVEHLLC

RHEQGAAMAAIGN="MGGAGWVHALEAQGWTVITGLADALLDS PPVVATGGVSAP

RHEQGAAMAAIGYARATGKTGVCIATSGFGATNLITGLADALLDS PPVVATGGVSAP

RIGTDARGEVPVVGALGACTKHSFLVQSLEELPRIMAEAPOVACSGRRGFVLVDIPKD

RIGASGDLEBWFTTVENBYXFPHABVBQARQMLAKAQKPMLYVGGGVGMAQAVPALRE

PLAATKMPATCLKGLGAVBADYPYYLGMLGMHGTKAANFAVQECDLLIAVGARFDDR

4675. 5340

/gene="0221"
/gene="0221" 61938 Ή; 240 420 300 360 480 540 900 099 719 779 839 120 CAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAG 899 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCATAAACCATAAAG AGTGGGCAGGCGCGCGCTTACTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTG TTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG 62417 ceaaaaceeacaaaeeecaceeaarererereeacaceacaaraaacrererrerreacee rrrrrradecerecereacacacecreceacacacacacacacararrereceacacaaaarradac TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCACCACGG rrarcsceeccegreacertrarrecreescricaeaccesacreecearreararrere creerresceresserressacecrarrrrccescreasidarrecerrreaasterrea AGTGGGCAGGCGCGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTG TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 62537 TGGTCGATGATTAAGACATGAAGCCCGAAATGGAACAGGTCATAGGCCAGTTCCGCATAT TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG TTTTTTAGGGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCACAAAATAGAC ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT TTTAACGCTGTCGCCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG TTATC-CGGCCGCGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTG GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG CGADADACGGACATGCATCTCATCACCACTACTCTGCTTCATCACGC TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTTGTT Teaceccagaaatcagccagccatcccatggtaaaagcagcaaacgcgttttctcttgtt TCCCAGTCTTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT CTGGTTGGCGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGA 1 AGAAATAATGTGGAGGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTTACGCCAC CGATTAACATGCCCGAGATGCGGATCGCCTAACAGGCGACCGGAACGTCCCTGCCGCGA Gaps 1; Length 91414;

셤 ò d à d ò g ò d à g à

```
determined from E. coli K12 strain MG1655. Predicted open reading frames were determined using GeneMark software, Kindly supplied by Mark Borodovsky, Georgia Institute of Technology, Atlanta, GA, 3032 [e-mail: mark@amber.gatech.edu]. Open reading frames that have been correlated with genetic loci are being annocated with CG Site Nos., unique ID nos. for the genes in the E. coli Genetic Stock Center (GGSC) database at Yale University, Kindly supplied by Mary Berlyn. A public version of the database is accessible (http://cgsc.biology.yale.edu]. Annocation of the genome requence more useful by correlating it with other data. Comments to the authors are appreciated. Updated information will be available at the E. coli Genome Project's World Wide Web site. Coli K12 sequence and its annotations are periodically updated; this is version M54. No sequence changes. Annotation updates; updated gene identifications and promoters, protein binding sites, and repeated R11ey; added promoters, protein binding sites, and repeated sequences described in reference 1. The unique numeric identifiers beginning with a lowercase 'b' sassigned to each gene (protein or RNA-encoding) are now designated as gene synonyms instead of a gene and products; This should allow them to be searched for in Entrez as gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation="MRTLQGMLLPVPMLPMAVYAQBATVKEVHDAPAVRGSIIANMLQ
EHDNPFTLYPYDTMYLIYTQTSDLMKEAIASYDMAENARKDEVKFQLSLAPPLWRGIL
GPNSVLGASYTQKSWWQLSNSESSERPETNYEPQLFLGFATDYRFAGWTLRDVEWGY
NHDSNGRSDPTSRSWMRLYTRLMAENGNWLVPEVRPMYVGWTDDNPDITKYMGYYQLK
IGYHLGDAVLSAKGQYNWNTGYGGAELGLSYPITKHVRLYTGVXSGYGESLIDYNFNO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="mnvaqaeviniesgakgylogtfgyggfrpggeeiidtylvisgrd
Clyvmptgggkslcyqipalilngltyvyvsplislmkdgydglgangyaaacinstgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="0289; 99 pct identical to PAL_ECOLI SW: P00631; CGSCNo. 384"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'note="factor Sigma70; predicted +1 start at 4003446"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             965. .993
/note="factor Sigma70; predicted +1 start at 4003392"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /EC number="3.1.1.32"
/function="enzyme; Central intermediary metabolism:
Phosphorus compounds"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="o610; 99 pct identical to 607 amino acids ofRECQ_ECOLI SW: P15043 but has 3 additional N-ter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="recQ"
/EC_number="3.6.1.-"
/function="enzyme; DNA - replication, repair,
restriction/modification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transI_table=11
/troducE="outer membrane phospholipase A"
/protein_id="AAC76824.1"
/db_xref="GI:2367300"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     product="ATP-dependent DNA helicase"
protein id="AAC76825.1"
db xref="G1:2367301"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Escherichia coli K12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /mol_type="genomic DNA"
/strain="K12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="synonym: b3821"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="synonym: b3822"
1077. .2909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /sub_strain="MG1655".
/db_xref="taxon:83333"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
1. .11509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRVGVGVMLNDLF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'codon start≈1
'transī table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'gene="recQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene="plda"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene="pldA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
Source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
   61758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61577 TGGGAGGGGTGTTAGCATCGGCGAGGCATGCGTGAAAAATAATGTCGGATGCGGCGTAAA 61518
                                                                                                                                                                                                                                                                        61757 icarcardecedeacadecedeacreardecadrararcerecedecereaceacrarie 61698
                                                                                                                                                                                                                                                                                                                                                                                                 61697 IGGICGATATITATIGIGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGA 61638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61578
                                                                                                                                                                                                                                                                                                                                           1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1080 TTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGG 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AE000458 11509 bp DNA linear BCT 01-DEC-2000
Escherichia coli K12 MG1655 section 348 of 400 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Excertia, Proteobacteria, Gammaproteobacteria, Enterobacteriales, Enterobacteriaceae, Escherichia.

Enterobacteriaceae, Escherichia.

Loases 1 to 11509)

Blattner, F.R., Plunkett, G. III, Bloch, C.A., Perna, N.T., Burland, V., Riley, M., Collado-Vides, J., Glasner, J.D., Rode, C.K., Mayhew, G.F., Mau, B. and Shao, Y. Kirkpatrick, H.A., Goeden, M.A., Rose, D.J., The complete genome sequence of Escherichia coli K-12

Science 277 (5331), 1453-1474 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
Submitted (13-OCT-1998) Laboratory of Genetics, University of Submitted (13-OCT-1998) Laboratory of Genetics, University of Madsonsin, 445 Henry Mall, Madison, WI 53706, USA.
ON SEP 9, 1997 this sequence version replaced gi:1790254.
This sequence was determined by the E. coli Genome Project at the Supported by NIH Sconsin-Madison (Frederick R. Blattner, director). Supported by NIH grants HG00301 and HG01428 (from the Human Genome Project and NCHGR). The entire sequence was independently
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (16-JAN-1997) Guy Plunkett III, Laboratory of Genetics, University of Wisconsin, 445 Henry Mall, Madison, WI 53706, USA. Email: ecoli@genetics.wisc.edu Phone: 608-262-2534 Fax: 608-263-7459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (02-5EP-1997) Guy Plunkett III, Laboratory of Genetics,
University of Wisconsin, 445 Henry Mall, Madison, WI 53706, USA.
Email: ecoli@genetics.wisc.edu Phone: 608-262-2534 Fax:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61817 TTTTGTGATCTCACCAATCCCAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAAT
                                                                                                                                                                                                                     TCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTG
                                                                                                  TITITGIGAATCICACCAATCCCAAAGTATIGIGITTICIGGCGCGCGTAITICCGCAAT
                                                                                                                                                                                                                                                                                                                                        1020 TGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AE000458 U00096
AE000458.1 GI:2367299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 11509)
lunkett, G. III.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 11509)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to 11509)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Escherichia coli K12
Escherichia coli K12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 (bases 1 t
Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         508-263-7459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61517 C 61517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1200 C 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97426617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9278503
                                                                                                                                                                                                                     960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1140
                                                                                                  900
                                      61877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 6
AE000458/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
```

gene

CDS

```
/gene="Yigk"
/function="orf; Unknown"
/function="orf; Unknown"
/function=start=1
/codon start=1
/transl_table=11
/transl_table=11
/froducE="corf, hypothetical protein"
/producE="orf, hypothetical protein"
/producE="orf, hypothetical protein"
/branslain="markForest"
/db_xref="GI:179028"
/db_xref="GI:179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /translation="weogokowetrenafaaftmoplidewrordeaftguddipur
Furrraohhdruvulcporlesynxyaelaydlehispoulidhroggrscrllad
Hildrunrruddiaftwoyddafwodevordeafthispocalstleorhegucdaia
Hildrungroudnafwarolinwaeahprredoyalotgrwaalprillerror
Rrnirfyaddfilruspestrungotlinwaeahprredoyalotgrwaalprilliqaeeeruvdur
REQQLEVMTGCRTGQIRLLYIAPERLMLDNFIEHLAHWNPVLLAVDEAHCISQWGHDF
RPEYZALGGLRQRFPTLPFMALTATADDTTRQDIYALLGLNDFLIQISSFDRRNIRYM
LHEKFPELDQLMRYVQEQRGKSGIIYCNSRAKVEDDTAARLQSKGISAAAYHAGLENNV
RADVQEKFQREDQLYIVATYARGMGINKPNYRRYVHFDIPRNIESYYQBTGRAGREDGL
PAGAMLFYDPADMAMLRRCLEEKFQCQLQDIERHKLNAMGAFARAQYTCRRLYLLNYFG
RGQSPCGNOTOLLOPPRYQYNGSTDAAJALSTIGRNNQRFRAMYYVEVYRGANRYKDRD
DYGHDKLKYYGMGRNSKHEHWYSIRQLIHJGLYTQNIAQHSALQYTGAARQYTAESS
LQLAVPRIVALKYGMGRKSHEHWYSIRQLIHJGLYTQNIAQHSALQYTBAARPYVAENDATLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3612. .3645
/note="REP (repetitive extragenic palindromic) element;
contains 1 REP sequence"
complement (3654. .4070)
                                                                                                                                                                                                                                                                                                                                                                                                      2104. .2140
/note="REP (repetitive extragenic palindromic) element;
contains 1 REP sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="0340; 99 pct identical amino acid sequence and qual length to PLDB_ECOLI SW: P07000"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         162. 3189
note="factor Sigma70; predicted +1 start at 4005588"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EC number="3.1.1.5"
function="enzyme; Central intermediary metabolism:
hosphorus compounds"
                                                                                                                                                                                                                                                                                                                                                                    MAEQMPITASEMLSVNGVGMRKLERFGKPFMALIRAHVDGDDEE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1
| transl_table=1,
| product=1,ysophospholipase L(2) "
| protein id="AAC76828.1"
| db_xref="G1:2367303"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="yigJ"
/note="synonym: b3823"
3224. .3592
/gene="yigJ"
/function="orf; Unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="synonym: b3824"
omplement (3654. .4070)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="synonym: b3825"
384. .5406
gene="pldB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   384. .5406
gene="pldB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        promoter
```

gene

CDS

gene

CDS

```
4050
                                                                                                                                                                                                                                   4770
                                                                                                                                                                                                                                                                                       4710
                                                                                                                                                                                                                                                                                                                                                                                             4590
                                                                                                                                                                                                                                                                                                                                                                                                                                                4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4110
                                                                                                                                                                                                                                                                                                                                           4650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1,
MIDRFCELRTAAGHPVEGGRPLVIKGAYHEILFBKDAMASVALHAIVDFFNRHNSPSG
                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   838
                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAATTGACCTTAAATCGCTGGCCTCTAACTCGCGTCGACATTTGTTCCAGCGCGCA 898
                                                                                                                                                                                                                                                                                                                                                                                                                                                ACACCGGGGGGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAAGCCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACACACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAAAACGGACAAAGCGCACCGGAATGTCATCCACAACACAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4349 TTTTTTAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCACAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACACCGGGGGGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIATCGCGGCGCGCTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGGTTGGCCTGGGGTTGGGACGCTATTTCCCCGCTCAGTGATTGCGTTTGAAGTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        derrearreacereacerreacecrarrrrececercacrarrecentracerrreadrerre
                                                                                                                                                                                                                                   AGAAATAATGTGGAGGTTGGCACCCCATCGAATGTGCCCAGTATATAGCGTTTTACGCCAC
                                                                                                                                                                                                                                                                                       4769 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                         4649 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                       TITACGIAGCICTCAATACGCCCCCGGCAGAIGACTACCACCCGGICAIGGIGCTGIGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACGCCAGAAATCAGTCAGCGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            receastrititiscrecisaaacaressiaareiseerraaeerraaeer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTTTTAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCCACAAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTAT - - CCGGCCGGTGTGTTGCTGGGCTTCAGACCGGACTGGCGATTCATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGTGGGCAGGCGCGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGT
                                                                                                                                                                                                           1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCCAGTATAAGCGTTTACGCCAC
                                                                                                                                                                                                                                                               GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCATCATTAAAG
                                                                                                                                                                                                                                                                                                                  CGATTAACATGCCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCCAGTCTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                       4007807"
                                                                                        +1 start at 4007865"
                                                                                                                   +1 start at 4007922"
                                                                                                                                                                                   Gaps
                                                                                                                                                                                  7
                                                                                                                                                         Length 11509;
                                       at
                                                                 at
                                        start
                                                                 start
                                                                                                                                                                                   Indels
                                       7
                                                                 7
                         7381. .5408

/note="factor Sigma70; predicted +1

5426. .5455

/note="factor Sigma70; predicted +1

5438. .5466

/note="factor Sigma70; predicted +1

5494. .5523

/note="factor Sigma70; predicted +1

5526. .6041
                                                                                                                                                                                   υ
..
                                                                                                                                                         DB 1;
                                                                                                                                                         Score 1180; DB; Pred. No. 0; Mismatches
                                                                                                                                                         Query Match
Best Local Similarity 99.4%;
Matches 1195; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4289
                                                                                                                                                                                                                                      4829
                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                            4709
                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                    4589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4109
                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                            promoter
                                                      promoter
                                                                                promoter
                                                                                                         promoter
                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 장염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요 상
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                              à
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                            ठ
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g &
```

ö 셤 ò g ò g ò g ò d ò

```
/ transl_table=11
/product= bloodegradative arginine decarboxylase"
/product= bloodegradative arginine decarboxylase"
/protein_id="AAP18688.1"
/brotein_id="AAP18688.1"
/db_xref="G1:30042946"
/translation="WKVLIVESEEHHODTWVGNAVERLADALSQQNVTVIKSTSFDDGFALESNBAIDCLMFSYQMEHPDEHONVRQLIGKLHERQQNVPVFLLGDFEKALAAMD
RDLLELNDEFAWILEDTABFAARAYAMTERRQQLLDFLFSALMKYSDIHEYSWAAP
RDLEENVDEFAWILEDTABFAYBYTGNIBRTDGLIBTESLLDHTGAFGFESESTKYAARVF
RDGGGVGFTKTPROARFYHDYYGNIBRTSFLAGSLLDHTGAFGFESESTKYARVF
RDGGGVGFTKTPROARFYHDYYGNIBRTSPLAGSCHOFTVSTYDGVCYNAKEAQ
NRYGIIGPIYPQGMQPPTILQKKISESPLTKCKAGQKESYCVTNCTYDGVCYNAKEAQ
DLLEKTSDRLHFDEMWYGYARFNPTYSPLYAICASNDVAVSMMDGNSGLSITQEV
OASYIHVREGRGAINFSRFNQAYMFHATTSPLYAICASNDVAVSMMDGNSGLSITQEV
IDEAVUFRQAMARLYKEFTADGSWFFEWNKEVYTDPQTGKTYDFADAPFKLLITVQD
CWVMHPGESWHGFKDIPDNNSMLDPIKVSILAPGMGEDGELBETYOVPAALVTAMLGRH
GIVPTRTIDEQIMPAMILESMGWTILVNTLCSFRHYDANTPLAQVNPELVTAWLSH
TYANMGIHDLGOTMPAMFENNGARLNEAYSGLSVARITYDANTPLAQVNPELVSUS
RNLPGRIANSVIR
                                                                           /transl_table=11
/product="putative amino acid/amine transport protein"
/protein_id="AAP18666.1"
/botein_id="AAP18666.1"
/db xref="d1:30042944"
/translation="WSSDADAHKVGLIPVTLMVSGNIMGSGVFLLPANLASTGGIAIY
@MYNTIGAGLSMYARMSPLDPSPGGSYAYARRCRGFFLGYGTNULYMLACWIGNI
AMVLGGYLSYFPRILKDPLYTTTCVVVLWIFFLULWIFFLGDAYGVTLMSPLIGNDLYDPLTTTCVVLALMIFVLLNIVGFRMITRVQAVATVLALI
PIVGIAVFGWFWFRGETYMAAMNVSGLGTFGAIQSTLNYTLMSFLGVESASYBAGGVK
                                                                                                                                                                                                                                                                                                                                                                                  NPERNVPIATIGGVILAAVCYULSTPAINGNIPNAALRVSASFEGDARNALGTRGA

IVSFCAAAGCLGSLGGWTLLAGGTAKAAADGGLFPPIFARVNKAGTFVAGLIIVGILM

TIFQLSSISPNATKEFGLVSSVSVIFTLVPYLYTCAALLLCHGHFGFARPAYLAVTT

TAFLYCUMAVUGGAKEVMWSFVTLMVITAMYALNYNRLHKNPYPLDAPISKD"

Complement (1542 . .2303)

/gene="adix"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /traislation="MRICSDOPCIVLLTEKDVWIRVNGKEPISLKANHWALLNCENNI
IDVSSLANTLVAHISHDIIKDYLRFLNKDLSQIPVWQRSATPILTLPCLTPDVFRVAA
OHSMPRAFESEKERRTRALLFTVLSRFLDSKKFLSLMYYMLRNCVSDSVYQIIESDIH
KDMLSWVASCLCLSSPSLLKKKLKSENTSYSQIITTCRMRYANDLMMDGKNISQVSQ
SCGYNGTSYFISVFROFYGMPPLHYVSQHRERTVA"
complement (2628 . 4895)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Anote="residues 1 to 755 of 755 are 99.47 pct identical to residues 2 to 756 of 756 from Escherichia coli K-12 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="residues 1 to 302 of 302 are 99.66 pct identical to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus tag="83624"
/function="enzyme; Degradation of small molecules: Amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /locus tag="83623"
/function="putative regulator; Not classified"
/note="residues 1 to 253 of 253 are 93.28 pct identical
residues 1 to 253 of 253 from Escherichia coli K-12 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /function="regulator; Degradation of small molecules: Carbon compounds"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
/produci="putatra ARAC-type regulatory protein"
/protein_id="AAP18667.1"
/b_rref="G1:30042945"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (5094. .6002)
/gene="melR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (1542. .2303)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement (2628. .4895)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complement (5094. .6002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /locus_tag="S3624"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="S3625"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          locus_tag="S3625"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TEIIDGIYHVMCVKA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="adiY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene="adiA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'gene="adiA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acids",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /locus_tag="83622"
/function="putative transport; Not classified"
/functe="residues 1 to 445 of 445 are 92.35 pct identical to
residues 1 to 445 of 445 from Escherichia coli K-12:
3989 GCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACGACGGCGCA 3930
                                                                                                                                                                                                        3870
                                                                                                                                                                                                                                                                                                                                                                  3810
                                                                                                                                                                                                                                                                                                                                                                                                                                             1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3689 Greegagegeretracearcegegagecarecereaaaaaaaaraarecegarecegeceraa 3630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE016990 290976 bp DNA linear BCT 22-APR-2003
Shigella flexneri 2a str. 2457T section 13 of 16 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1079 ATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTG 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3749 ATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTG 3690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shigella flexneri 2a str. 2457T
Encteridacedes in the shigella in the street of the stre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 290976)
Wei,J., Goldberg,M.B., Burland,V., Venkatesan,W.M., Deng,W.,
Fournier,G., Mayhew,G.F., Plunkett,G. III, Rose,D.J., Darling,A.,
Mau,B., Perna,M.T., Payne,S.M., Runyen-Janecky,L.J., Zhou,S.,
Schwartz,D.C. and Blattner,F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3809 GTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGG
                                                                                                                                                                                                   3929 GITITITGIGAATCICACCAATCCCAAAGIATIGIGITITCIGGCGGCGCGTATTTCCGCAA
                                                                                                                                                                                                                                                                                                                                                         3869 TICATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                             GIGGICGATATIOTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAATAATGTCGGATGCGGCGTAA
                                                                                                                             TTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (13-JUN-2002) Genetics Laboratory, University of
Wisconsin - Madison, 445 Henry Mall, Madison, WI 53706, USA
Location, Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .290976
/organism="Shigella flexneri 2a str. 2457T"
/mol type="genomic DNA"
/strain="2457T"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /serotype="2a"
/db_xref="taxon:198215"
complement(68. .1405)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="S3622"
complement(68. .1405)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:30042943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene="yjdE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene="yjdE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AE016990 AE014073
AE016990.1 GI:30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC 3628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12704152
                                                                                                                                                                                                                                                                                   959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1139 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1199
                                                                                                                             899
                                                                                                                                                                                                                                                                                                                                                                                                                                             1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
AE016990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
```

20

```
Indels
                                                                                                                                                                                                                                                                                                                                          DB 1,
                                                                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                       96.6%; Score 1159.4;
llarity 98.8%; Pred. No. 0;
Conservative 0; Mismatches
                                 209
   /locus tag="S3628"
/note="residues 1 to
residues 1 to 209 of
                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 1189; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 251854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               251554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           251614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       251674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         251734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            251974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ર્જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \dot{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                              ransT_table=11
/product = "regulator of melibiose operon"
/product = "regulator of melibiose operon"
/product = "regulator of melibiose operon"
/bo_xref="d1:30042947"
/db_xref="d1:30042947"
/db_xref="d1:300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     / traislation="MMSAPKITFIGAGSTIFVKNILGDVFHREALKTAHIALMDIDPT
KRHGLEGITADTLGPGAGSGKITCHTOCKEALEDADFVVAPFOLGGYBPCTVTDFBVC
KRHGLEGITADTLGPGGINKALRTIPHLMQICENMTBVCPDATMLNYVNPMAMNTWAN
YARYPYIKOVGLCHPGGINKALRTIPHLMQICENMTBVCPDATMLNYVNPMAMNTWAN
YARYPYIKOVGLCHPGGABLARDLNIDPATLKYRCAGINHMAFYLLELBKRYADGS
YVNLYPELLAAYEAGQAPKPNIHGNTRCQNIVRYENFKKLGYFVTESSEHFABYTPWF
IKTGREDLIERRYKVPDLDSTPKRCVECLANMHKELEBFKNARSRIDIKSBERYAFTINNA
INTGRESALTGNYRGLINNLEDGCCVBUACLUNDANGIQPFKVGTLPSHLAALMQTN
INTGRESALTGNYRAAMMDPHTAAVLGIDBIYALVDDLIAAHGDMLPSWLH
INVQTLLTEALLTENRDRVYHAAMMDPHTAAVLGIDBIYALVDDLIAAHGDMLPSWLH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   function="transport; Transport of small molecules:
arbohydrates, organic acids, alcohols"
hote="residues 1 to 469 of 469 are 96.37 pct identical to
esidues 1 to 469 of 469 from Escherichia coli K-12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon start=1
transI_table=11
product="mellibicose permease II"
proclad=AAP18671.1"
db_xref="G1:30042949"
translation="MTTXLSYGFGAFGKDFAIGIVYMYLMYYYTDVVGLSVGLVGTLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IVALIYKNDQLSCLLGMALAYNVASNIITGFAIYYFSYVICDADLEPYYLSYAGAANL
VTLVFFFRLVKGLSRRILMAGASILPVLSCGVLLLMALMSYHNVYLIVIAGILLMVGT
AAFWVLQVIMVADTVDYGEYKLHVRCESIAYSVQTMVVKGGSAFAAFFIAVVLGMIGY
VPRVRSGSTQALLGMQFIMJALPTLFFWVTLILYFFFFYRLNGDTLRRIGHLLDKYRKV
PPEPVHADIPYGAVSDVKA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                to 451 of 451 are 98.89 pct identical to of 451 from Escherichia coli K-12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LVARIMDAINDPIMGMIVNATRSRWGKEKKPWILIGTLANSVILFLLFSAHLFEGTTQI
VEVCVTYILWGMTYTIMDIPFWSLVPTITLDKREREQLVPYPRFFASLAGFFVTAGVTL
PFVNYVGGGDRGFGFGMFTLVLIAFFIVSTIITLRNVHEVFSSDNQSSAEGSHLTLKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Îocus tag="83626"
function="enzyme; Degradation of small molecules: Carbon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="REP (repetitive extragenic palindromic) element,
contains 1 REP sequence"
complement(3303. .9932)
of 302 from Escherichia coli K-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=1
|transT_table=11
|product="alpha-galactosidase"
|protein_dic="AAP18670.1"
|db_xref="GI:30042948"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /locus_tag="S3628"
complement(9303. .9932)
/gene="yjdF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           locus tag="S3626"
285. 7640
gene="melA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       locus tag="S3627"
755. .9164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .ocus_tag="S3627"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="residues 1 residues 1 residues 1 to 451
residues 1 to 302
                                                                                                                                                                                                                                                                                                                                                               6060. .6114
/note="BOXC-20"
6285. .7640
                                                                                                                                                                                                                                                                                                                                                                                                                           285. .7640
gene="melA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    755. .9164
gene="melB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene="melB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene="yjdF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9250. .9283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "abnuodmo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    755.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
```

```
251433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             251673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             251493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           251733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             251913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           251973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              251853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      252033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                252093
  to
                                                                               /codon start=1
/transl_table=11
/transl_table=11
/product="hypothetical protein"
/protein_id="AAP18672.1"
/protein_id="AAP18672.1"
/bx xref="id1:30042950"
/translation="WRTLKELLNNGALALTLLIYTGISAHDKLTWLLEVTPVIIV
VPLLLATARRYPLTLLLYTLIFFHAIILMVGGQYTYAKVPVGFEVQEWLGLSRNPPDK
                                                                                                                                                                                                                                                                                                                                                             ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      897
                                                                                                                                                                                                                                                                                                                                                                                                                     9
of 209 are 83.25 pct identical from Escherichia coli K-12 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251314 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        regregargarraagacarcaaaceeeaaaregaacagaregraggeeagricegearar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGACCGGGCTGAACCTCCTGCCAGAATGCCGCCAGATCATCAACATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTACGTAGCTCTCAATACGCCCCCGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITACGIAGCICICAAIACGCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           reaceccaeaarcaercaeceerccareeraaaaecaecaacaaacecerrrrcrcrrerr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITITITAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCACAAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTTTAAGGGGGCCCCCAACGCAACGCTGCGAACAAGTAGCGTATTGTGGCACAAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acacceggacircarcarcacciragaargeregriricecraccrecreararear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              251914 TTTAAGCCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   252034 GCTGGTTGGCGTGGGGTTGGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGATTAACATGCCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receaererrrrecrecreandancareserrarerecererranaeceneranancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCCAGTCTTTTTGCTGCTGAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>асасседеваеттсятсятся ссттасья тесттесствестелентеся тестатоватем т</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTAT - - CCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGGTTGGCGTGGGGTT-GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC
                                                                                                                                                                                                                                                                                                                                                          3; Gарв
                                                                                                                                                                                                                                                                                                        Length 290976;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         838
```

ò d ਨੇ g à d ò g ð 엄 ⋧

```
percent identity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="similar to WZXE ECOLI gi | 1790227 percent identity 98 in 416 aa (Conserved in E.coli K-12)"
      Yokoyama, K., Han, C.-G., Ohtsubo, E., Nakayama, K., Murata, T., Tanaka, M., Tobe, T., Iida, T., Takami, H., Honda, T., Sasakawa, C., Ogasawara, N., Yasunaga, T., Kuhara, S., Shiba, T., Hattori, M. and
                                                                                       Complete genome sequence of enterohemorrhagic Escherichia coli
0157:H7 and genomic comparison with a laboratory strain K-12
DNA Res. 8 (1), 11-22 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="similar to WECD ECOLI gi|1790225 p
98 in 181 aa (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Escherichia coli O157:H7"
/mol_type="genomic DNA"
/strain="0157:H7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     producT="hypothetical protein"
protein_id="BAB38146.1"
db_xref="G1:13364199"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /evidence=not_experimental
fransl_table=11
fproduct="putative cytochrome"
fprotein_id="BAB38148.1"
db_xref="GI:13364201"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ECOLI
in E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            product="putative regulator"
protein_id="BAB38147.1"
db_xref="G1:13364200"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /sub_strain="aim" 0509952"
/db_xref="taxon:83334"
103. .648
103. .648
103. .648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'evidence=not_experimental
'transl table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    evidence=not_experimental
transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="similar to WECE E
99 in 376 aa (Conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALKRYIQSGANVESTAYWLYR
                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .03. .648
'qene="ECs4723"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       553. .1783
/gene="ECs4724"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="ECs4724"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [785. .3035
/gene="EC84725"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1785. .3035
/gene="EC84725"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                           Hayashi,T.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                           genome project.
                                                                                                                                                                            11258796
                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                      MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
252154 CGCAATTGATCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGGGGGGC 252213
                                                                                                                                                                                                                                                               252333
                                                                                                                                                                                                                                                                                                                                                                  252453
                                                                                                                                                                                                                                                                                                                                                                                                                                                     252513
                                                                                                                                                                                                                                                                                                                        1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Makino, K., Yokoyama, K., Kubota, Y., Yutsudo, C.H., Kimura, S., Kurokawa, K., Ishi, K., Hattori, M., Tatsuno, I., Abe, H., Iida, T., Yamamoto, K., Ohnishi, M., Hayashi, T., Yasunaga, T., Honda, T., Sasakawa, C. and Shinagawa, H. Complete nucleotide sequence of the prophage VT2-Sakai carrying the verotoxin 2 genes of the enterohemorrhagic Escherichia coli O157:H7 derived from the Sakai outbreak Genet. Syst. 74 (5), 227-239 (1999)
                                                                                                                                                      1017
                                                                                                                                                                                                                                                                                                                                                                                                             1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Complete nucleotide sequence of the prophage VT1-Sakai carrying the Shiga toxin 1 genes of the enterohemorrhagic Escherichia coli 0157:H7 strain derived from the Sakai outbreak
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BCT 07-MAR-2001
                                                                     957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ohnishi,M., Murata,T., Nakayama,K., Kuhara,S., Hattori,M.,
Kurokawa,K., Yasunaga,T., Yokoyama,K., Makino,K., Shinagawa,H. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eschérichia coli O157:H7
Eschérichia coli O157:H7
Bacteria, Proteobacterial Gammaproteobacteria, Enterobacteriales;
Enterobacteriaceae, Eschérichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Comparative analysis of the whole set of rRNA operons between an enterohemorrhagic Escherichia coli 0157:H7 Sakai strain and an Bscherichia coli K-12 strain MG1655 Syst. Appl. Microbiol. 23 (3), 315-324 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yokyyama, K., Makino, K., Kubota, Y., Watanabe, M., Kimura, S.,
Yutsudo, C.H., Kurokawa, K., Ishii, K., Hattori, M., Abe, H., Iida, T.
Yamamoto, K., Hayashi, T., Yasunaga, T., Honda, T., Sasakawa, C. and
                                                                                                                                                                                        252274 ATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTAT
                                                                                                                                                                                                                                  TGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATG
                                                                                                                                                                                                                                                                                                                   GATTAAAGGACCAAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCT
                                                                                                                                                                                                                                                                                                                                                     252394 GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTTATTGTTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                      AGTITITGIGAATCICACCAATCCCAAAAGTATTGIGITTICIGGGGGGGGTATTICCGCA
                                                                                                       252214 AGTITITIGIGARICICACCAARCCAAAAGTATIGIGITICIGGCGCGCCCTATITICGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bscherichia coli O157:H7 DNA, complete genome, section 18/20. AP002567 BA000007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11111050
4 .(sites)
Hayashi,T., Makino,K., Ohnishi,M., Kurokawa,K., Ishii,K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    252514 AAC 252516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shinagawa, H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 (sites)
Ohnishi,M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1198 AAC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0734605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1108008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20564182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hayashi,
                                                                 868
                                                                                                                                                 958
                                                                                                                                                                                                                                  1018
                                                                                                                                                                                                                                                                                                                   1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT B
AP002567/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
```

```
/translation="MQAKIAASNTGBLDALQQLGFGLVEGEVDLALPVNNASDSGAVV
AQETDIPALRQLASAAFAQSRFRAPWYAPDASSRFYAQWIENAVRGTFDHQCLILRAA
SGDIRGYVSLRELNATDARIGLLAGRGAGABLMQTALNWAYARGKTTLRVATQMGNTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /trānslation="MIPFNAPPVVGTELDYMQSAMGSGKLCGDGGFTRRCQQMLEQRF
GSAKVLLTPSCTASLEMAALLLDIQPGDEVIMPSYTFVSTANAFVLRGAKIVFVVDVRP
DTMNIDBTLIBAAITDKTRVIVPVHYAGVACEMDTIMALAKKHNLFVVEDAAQGVMST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YKGRALGTIGHIGCESFHETKNYTAGGEGGATLINDKALIERAEIIREKGTNRSQFFR
GVDKYTWATUSGSYLMSDDAAYLMADLEAADRINGQRLALWONYVDALAFLAKAGR
IELESIPDGCLQNAHMYIKTIKLDIGDRSALINFLKEAELMAVFHYIPLHGCFAGERFG
EFHGEDRYTTKESERLLRLPLFYNLSPVNQRTVIATLLNYFS"
                                                                                                                                                                               Submitted (26-UUN-2000) Ken Kurokawa, Osaka University, Genome Information Research Center; 3-1, Yamadaoka, Suita, Osaka 565-0871, Japan (E-mail:Ken@gen-info.osaka-u.ac.jp, URL.http://www.gen-info.osaka-u.ac.jp/, Tel:81-6-6879-8365, Fax:81-6-6879-2047)
5 (bases 1 to 318703)
Ohnishi, M., Kurokawa, K., Makino, K., Yasunaga, T., Shinagawa, H. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gi 2367285 percent identity coli K-12) "
```

```
원
                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                              /evidence=not_experimental
/transl_table=11
/product="hypothetical protein"
/protein_id="Babasa149.1"
/db_xref="G1:13364202"
/translation="myULINUGSDIPHHNRTVLRFNDALAATSEHAREFMVVQKDD
/translation="myULINUGSDIPHHNRTVLRFFHGQFNPTLMLLISGGIKPS
GFWHINGADLYSLSSGLRYKLFYPLRRLAQKRVGCVFATRGDLSFFAKTHRVAGEL
LYFPTRUDASLNTWANDRQREGKMTILVGNSGDRSNEHIAALRAVHQGGOTVKVVVP
MGYPPHNRAYIESVRQAGLELFSEENLQVLSEKLEFDAYLTLLRQCALGYFIFARQG
IGTLCLLIQAGTPCVLNRENPWQDWTEQHLFVLFTDDLNEDIVREAQRQLASVDKN
TIAFFSPNYLQAGTRCALAIAAGEVA"
/translation="MSLAKASLWTAASTLVKIGAGLLVGKLLAVSFGPAGLGLAANFR
ADLITVLGVLAAAGAGIFNGVTKYVAQYINDPQQLRKVVOTSSAWTLGFSTLAALVFULAA
APISLGLFGNHDYQGLRXVYTVATVULAA
APISLGLFGNHDYGLRALVALVQMGIAWGULLLALMKGFRDAAGALSLIVGSLIGV
LAYYVGYRLGGYBGALLGLALIPALVYIPAAMHLIKRGAIPLSYLKFBRWDNGLAGGLS
KFTLATLLIFGYTLPYAYTWAKLLAAQYSWDBYGIWGGYSSISDAYLQFITASFSYYL
APTLSRLTEKRDITREVVKSLKFVLPAAAASFTWHLLRDFAIWLLISNKFTAMRDLF
APQLYGDVLKYGAYVESYLVIARASIRFYILABVSGFTLLMVFAHWLIPTHGALGAA
AXMATYIVYFSLCCGGVFLLMRRRA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon start=1
/codon start=1
/evidence=not_experimental
/transl_table=1;
/product="TDP_evidence=10;
/product="TDP_evidence=10;
/protein_id="BAB38150.1"
/db_xref=="G1:13364203"
/translation="MSLLDENEVWLLCTLFIATLTWFEFRVRFNRPFSLLFL
LTFFRGFPLFGVLYPREDVGYAPPBIILQALISAGCFYAVYVTYKRRLRKRVADVPR
RPLFTMNRVBTNLTWYILMGIALVSVGIFFMHNGFLLFRLNSYSQIFSSBVSGVALKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FFYFFIPAMLVVYFIRQDSKAMLFFLVSTVAFGLLTTYMTVGGTRANTITAFATFLFIG
ITRGWISLWYLAAAGVLGTVGAFWILLKRYGMVVSGDEAFYFFLYLTRDTFSFWENLA
LLLGWYDDIDFGGLAPIVDFVVFTPSWWPGRPSRVLNSANYFTWEVLNNHSGLAIS
PTLIGSLVYWGGALFFLGALVYGLITWRDKLYELGNRETRRYKAALLHGSFORGAIF
NMIVLAREGLDSFVSRVVFFIVVFGACLMIAXLLYWLPESAGLIHKRTKSSERTQVEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein_id="BAB38151.1"
| All xxef="G1:13364204"
| translation="MNNNTAPTTLEGLOLIGWRDWQHALDYLFADGOLKQGTLVAI
| translation="MNNNTAPTTLEGLOLIGWRDWQHALDYLFADGOLKQGTLVAI
NABKWLTIEENAEVRELINAAEFKYADGISVVRSVRKKYPQAQVSRVAGADLWEELMA
AAGKGGTYPVFLVGGREPRLAAGTGAKLAKARNQWNNNIVGSQDGYFKERQRQRALFBELHASG
AQIVTVAMGSFKQETERRDCELVHPDALLWGVGGTYDVFTGHVKRAPKIWQTLGLEWL
YRLLSQPSRIKRQLRLRYLRWHYTGNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gi 2367288 percent identity coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gi|2367289 percent identity coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   percent identity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acid
                                                                                                                                                                                                                                                                  /note="N-terminal part (1-62 in 359 aa) is similar to
YIPM 1 ECCLI gi|2367286 percent identity 96 in 62 aa,
C-terminal part (156-359 in 359 aa) is similar to
Yeodon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="similar to WECG ECOLI gi|2367289 percent ide 98 in 246 aa (Conserved in E.coli K-12)" /codon_start=1 /codon_start=1 /transl table=11 /transl table=11 /product="probable UDP-N-acetyl-D-mannosaminuronic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6394. .7779
/gene="EC84729"
/note="similar to YIFK_ECOLI gi|2367290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note="similar to WECF ECOLI
39 in 450 aa (Conserved in E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="ECs4728"
5463. .6203
/gene="ECs4728"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4108. .5460
/gene="ECs4727"
4108. .5460
                                                                                                                                                                                                  /gene="ECs4726"
3032. .4111
                                                                                                                                                                                                                                                  'gene="ECs4726"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1108. .5460
|gene="ECs4727"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'gene="EC84729"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ransferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .6203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5463.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
```

```
37907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37187
                                                                                                                                                                                                                                                                                                                                                                   37967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37487
               /codon_start=1
/codon_start=1
/t-didence=not_experimenta1
/transl_table=11
/product="putative amino acid/amine transport protein"
/protein_id="BAB381521"
/db_xref="G1:1344208"
/translation="MADNKPELQRGLEARHIELIALGGTIGVGLFWGAASTLKWAGPS
VILAYIIAGEVFFTINRSMADNIFPLAYUARNATARYENSPFGYTTANNSVWFWMA
VGISSITAAIGYVVQRFPERMADWIPALIAVALVALANIAARHYENGELEFWFANIKVTI
IIVMIVIGLGVIFFGFGNGGQSIGFSNLTEHGGFFRAGGWKGFLALCIVVASYQGVEL
                                                                                                                                                                                                                                                                                    7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         837
                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        897
                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                    AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGGGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAAATCGTAGGCCAGTTCCGCATTCCGCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITAAGCCTGTCGCCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                          GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITACGTAACTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCCAGTCTTTTTGCTGCAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rrrrrraggerecergacacaacecreceacacacacacaracecararraggec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTATCGCGGCGCGCGCGCTCTATTGCCGGGCTTCAGACCGGACTGGCGATTCATATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTGGTTGGCGTGGGGTTGGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                              <u>AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAAGGCTTTAACGCCAC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                GGACCGGGCTGGACCTCCTGTTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cearraacarecceaagarecegareeecraacaeceacegaacerecereceeea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTACGTAGCTCTCAATACGCCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCCAGTCTTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTTTTAGCGTGCCTGACACACACGCTGCGACAGTAGCGTATTGTGGCACAAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAT - - CCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAGTGGGCAGGCGGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaagregecagecececrracrrearrregeregeaanacaecaaregeececreerege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACACTAAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC
                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                               Length 318703;
                                                                                                                                                                                                                                                                                    3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGGTTTT
                                                                                                                                                                                                                                                                                    Indels
(Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                  19;
                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                        Score 1146.6;
Pred. No. 0;
0; Mismatches
    aa
                                                                                                                                                                                                                                            95.5%;
98.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGGTTGGCGTGGGGTT-
    461
                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                            Query Match
Best Local Simi
Matches 1181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37366
                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          838
                                                                                                                                                                                                                                                                                                                                                                       38026
                                                                                                                                                                                                                                                                                                                                                                                                                                                      37966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37306
```

ઠે 셤 ò d ò В  $\delta$ a ò 원 ò

```
/grous_grag="c4452"
/gous_grag="c4452"
/gous_agg="c4452"
/gounber="2.4.1.58"
/function="enzyme; Surface polysaccharides and antigens"
/function="enzyme; Surface polysaccharides and antigens"
/function="gatherichia" coli K.12 ortholog: b3626; Escherichia
coli 0157:H7 ortholog: z5051"
/codon start=1
/transI_table=11
/product="h1popolysaccharide 1,2-glucosyltransferase"
/protein_id="AAMSE388 1"
/db_xref="G1:26110704"
/translation="WMREFIZERESYLDNIXKENVPELNVSYGIDKNFLYGAGVSISSV
/translation="WMREFIZERESYLDNIXKENVPELNVSYGIDKNFLYGAGVSISSY
ILINNSDINFVEHYFTDYLDDIXFSPETALYLDDRYKFADLFTSGFMSY
ATYFRULSFEYLSESISTLLXLDADVVCKGSLKPLTKIIFKDEFAAVIPDNDSTQAAC
                                                                                                                                                      /trānslation="MDLLAESITEVAVSGEIANTDRVLNIAYGIDRNFIFGAAVSMQS
VYMINPDLAVKFHLETDYIDEDYLORVNAFTSKANVBVRIYKYSSAFIDIFPSGLKQM
SYAFFRLVAFQYLSETIBLDIDAVIDADVICKGSLAGALDINDGDKFAVATKOVFMQ
SKPAFRILAIEGLPGMYVYLQLEAMAKUDFMKAIAMIASDPQHTKYKLDQDI
LNIILFFSHCIFISGDYDCFYGIDYELKNKSDEDYKKTITDDTKLIHYVGVYKPMNDMT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      fprotein_id="AAN82887.1"
/db_xref="G1:26110703"
/translation="WITSTRYRGFSPYYKDNDNKYKEIFDEILAXNFKTVKVLRNIDD
fvranslation="WITSTRYRGFSPYYKDNDNKYKEIFDEILAXNFKTVKVLRNIDD
fvranslation="WITSTRYRGFSPYKNBRFLKSFVKGDYYQNLIVETDRYRSAGLTFPND
FYFFLAERKIFNYASYENTMLIEYVEGYELNDNPIIPEDVKABIKASMEKLHALNMLSGD
PHRGNFIVGKDGVRIIDLSGKSCTARRKARDRLAMERHIGIANEIKDYGYYSVIYRTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="AANB2889.1"
/db_xref="G1:26110705"
/translation="WSAHYPNPQEMINKTIIFDERPANSVASSFHVAYGIDQNFLFGC
/translation="WSAHYPNPQEMINKTIIFDERPANSVASSFHVAYGIDQNFLFGC
STTSVLLHNNDVSFVFHYDDIPEADIQRLSQLAKSYHTCIQIHLVNCERLKALP
TYKOWSIANYFRFYADYFIDQQDKILYLDADIACQSHLKPLITMDLANNVAAVVTER
DANNWSLRAQSLQCNELEKGYFNSGVLLINTLAWAQESVSAKAMSMLADKAVVSRLTY
                                                                                                                                                                                                                                                                                                      NYPOQKYFNEAYQVSCWNDVAFIPATNEKQYQVKYQHAKKNGDTFNAFIYFIKFKLNK
YKRKLFGQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AKRLNIPGMNGRYFNAGVIYVNLKKWHEANLTPYLLTILRGETKYGSLKYLDODALNI
SPRNANIYIAKDPOTIYTLANBLHDRSHRKYQOTITDKTVLLHYTGITKFWHSNAGYP
SASYFNIAREQSPWRKYPLKARETTVAEMQKQYKHLFAHGEYIKGITSLIKYKLKK"
ÇOMDIement (2840. .3856)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Escherichia coli K-12 ortholog: b3625; Escherichia coli 0157:H7 ortholog: z5052" /codon start=1 /cadan table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="rfal"
/locus tag="64453"
/locus tag="2.4.1.44"
/EC_number="2.4.1.44"
/function="enzyme"
/note="Bschertchia coli K-12 ortholog: b3627; Bscherichia coli 0157:H7 ortholog: 25053"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="Lipopolysaccharide 1,3~galactosyltransferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                product = "Lipopolysaccharide core biosynthesis protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus tag="c4451"
/function="enzyme; Macromolecule metabolism:
Lipopolysaccharide"
   /transl_table=11
/product="UDP-galactose:(galactosyl)
alphal,2-galactosyltransferase"
/protein id="AAN82886.1"
/db_xref="G1:26110702"
                                                                                                                                                                                                                                                                                                                                                         complement (1126. .1818)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (1828. .2823)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /Iocus_tag="c4452"
complement(1828. .2823)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="rfal"
/locus_tag="c4453"
complement(2840. .3856)
                                                                                                                                                                                                                                                                                                                                                                                                                            /locus_tag="c4451"
complement(1126. .1818)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   table=11
                                                                                                                                                                                                                                                                                                                                                                                                   gene="rfaY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LRKFIKKLKGKA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="rfaY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'gene="rfaJ"
                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                37186 GGCAATTGATCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC 37127
                                                                                                                                                   AGTTTTTGGGAATCTCACCAATCCCAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCA 37067
                                                                                                                                                                                                                                                                                                                                                                                         37006 rérédicéaratratreréardarédiracéccaccirécreaacecarrecrerate 36947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            36946 GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCT 36887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37007
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bscherichia coli CFT073 section 15 of 18 of the complete genome. AED16769 AED14075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Escherichia coli CFT073

Bacterichia coli CFT073

Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales; Enterobacteriales; Enterobacteriales; Escherichia.

I (Dases I to 301566)

Welch, R.A. Burland, V. Plunkett, G.D. III, Redford, P., Roesch, P., Rasko, D.A., Buckles, E.L., Liou, S.R., Boutin, A., Hackett, J., Stroud, D., Maylew, G.F., Rose, D.J., Zhou, S., Schwartz, D.C., Perna, M.T., Mobley, H.T., Donnenberg, M.S. and Blattner, F.R. Extensive Mosiac Structure Revealed by the Complete Genome Sequence of Uropathogenic Escherichia coli
Proc. Natl. Acad. Sci. U.S.A. 99 (26), 17020-17024 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus_tag="c4450"
/note="Residues 1 to 341 of 342 are 98.24 pct identical to
residues 1 to 341 of 341 from GenPept.129 :
spb |AAC69573.1 | (AF019746) UDP-galactose:(galactosy1) LPS
alphal, 2-galactosyltransferase WawW [Escherichia col1]"
/codon_start=1
                                                                                                                                                                                                            ATTCATCATGCCGCAACAGCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTAT 1017
                                                                                                                                                                                                                                                                                                                                   IGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATG 1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1138 GGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAATAATGTCGGATGCGGCGTA 1197
                                                                                                957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 301566)
Welch,R.A., Burland,V., Plunkett,G.D. III, Redford,P., Roesch,P., Rasko,D.A., Buckles,E.L., Liou,S.R.P., Boutin,A., Hackett,J., Stroud,D., Mayhew,G.F., Rose,D.J., Zhou,S., Schwartz,D.C., Perna,N.T., Mobley,H.L.T., Donnenberg,M.S. and Blattner,F.R. Submitted (20-JUN-2002) Genetics Laboratory, University of Wisconsin - Madison, 445 Henry Mall, Madison, WI 53706, USA Location/Qualifiers
                                                                                                                                                                                                                                                                37066 ATTCATGACGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGTGTCACCACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1078 GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCT
                                                                                         AGTITITGIGAATCICACCAAICCCAAAAGIATIGIGITITCIGGCGCGCGCTAITICCGCA
1. .301566
Coganisma-Escherichia coli CFT073"
/mol_type="genomic DNA"
/strain="CFT073"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:199310"
complement(72. .1100)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus_tag="c4450"
complement(72. .1100)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene="waaW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="waaW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36826 AAC 36824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1198 AAC 1200
                                                                                         898
                                                                                                                                                                                                                958
                                                                                                                                                                                                                                                                                                                                1018
                                                                                                                                                   37126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 9
AE016769/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
```

gene

```
Best Local Similarity
Matches 1176; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        719
                                                                                                                                                                                                                                                                                                                                               281750
                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           838
                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                        281690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            281570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   281450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        281330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  281270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            281210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               281090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          281030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      280970
                    CDS
                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DTIPILSENPEINALYGIKNKRAKASEKIANFFYLIKULRANKYDLIVNITDQWMYAI
LVRLLNARVKISQDYHHRQSAFWRNSFTHHVPLQGGNVUESNLSVLTPLGLESIVKQT
TWSSPPKDDLACVRERRELDHAGVGQNYVVIQPPARQIPKCWNDAKFSAVIDALHARRYEYEV
VLTSGPPKDDLACVREROZOTPPVTALARGKVRFPELGALIDHAQLFIGVSEPHIA
AAAVNTPLISLFGATDHIFWRRWSNNMIQFWAGDYREMPFRDQRDRHEMYLSVIPPALA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MIVARCLYKYFPFGGLQRDFMRIAOTVAARGHHVRYYTOSWEGE
CPDVFELIKVPVKSHTNHGRNAEYFAWVQKHIREHPVDRVVGFNKMPGLDVYYAADVC
YAEKVAQEKGFFYRLISRYRHYAAFERATFEQGKRTQLLMLTDKQIADFOKHYQTEAE
                                                                                                                                                                                                                                                                                                                        /protein_id="AAN82890.1"
/db_xref="G1:26110706"
/trainslation="WVWYUELKEPFATLWRGKDPFBEVKTLQGEVFRELETRRTLRFE
MAGKSYFLKWHRGTTLKRIIKOLLSLRMPVLGADRRWNATHRLRDVGVDTWYGYRFGE
                                                                                                                                                                                                                                                                                                                                                                                                  KGINPLTRTSF1ITEDLTPTISLEDYCADWATNPPDYRVKRMLIKRVATMYRDMHAAG
INHRDCYICHFLLHLPPSGKEEELKISVIDLHRAQLRTRVPRRWRDKDLIGLYFSSMN
IGLTQRDIWRFMKVYFSAPLKDILKQEQGLLSQABAKATKIRERTIRKSL"
MDQDILNLILLGKVKFIDAKYNTQFSLNYELKKSFICPINDETVLIHYVGPTKPWHYW
AGYPSAQPPIKGKEASPWKNEPLMRPMNSNYARYCAKHNFKQNKPINGIMNYIYYFYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus_tag="c4455"
/function="enzyme; Macromolecule metabolism:
Lipopolysaccharide"
Lipopolysaccharide"
/note="Glucosyltransferase I; Escherichia coli K-12
/ortholog: b3631; Escherichia coli 0157:H7 ortholog: z5055"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RFHILPPGIYPDRXYSQQPANSREIFRKNGTTEQQYLLLQVGSDFTRKGVDRS.EAL
ASLPDSLEHNTLLYVVGDXPRKFEALAEKGGVRSNVHFEGGRNDVSELWAADLLH
PAYQEAAGIVLLEAITAGLPVITTAVCGYAHYIVDANCGEAIAEPFRQETINEILRKA
LTQSSLRQAMAENAHYADTQQLYSLPEKAADIITGGLDG"
complement (5793. . 6841)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        translation="MDKPFRRILLIKMRFHGDMLLTTPVISSLKKNYPDAKIDVLLYQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /locus tag="c4456"
//SCnumber="2.-.-."
//FUnction="enzyme; Macromolecule metabolism:
Lipopolysaccharide"
//note="Bacherichia coli K-12 ortholog: b3632; Escherichia coli 0157:H7 ortholog: 25056"
                                                                                                                                                                                                            Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/transl_table=11
/product="Lipopolysaccharide core biosynthesis glycosyl
transferase = faQ"
transferase = faQ"
/db_xref="G1:26110708"
                                                                                                                                                                                                                                                                     'transl_table=11
'product="Lipopolysaccharide core biosynthesis protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'transī_table=11
'product="Lipopolysaccharide core biosynthesis protein
                                                                                                                                                                                                        /note="Escherichia coli K-12 ortholog: b3630;
coli O157:H7 ortholog: z5054"
                                                                                                                                                 locus tag="c4454"
function="enzyme; Macromolecule metabolism:
ipopolysaccharide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein_id="AAN82891.1"
db_xref="GI:26110707"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus_tag="c4456"
complement(5783. .6841)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /locus_tag="c4455"
complement(4662. .5786)
                                                                                                            complement (3872. .4678)
                                                         complement (3872. .4678)
                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (4662. .5786)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VIAAVDKLLPSSTTGTSL"
7254. .8531
/gene="kdtA"
                                                                                            locus_tag="c4454"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon start=1
transI table=1
                                                                                                                                                                                                                                               codon_start=1
transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene="rfaG"
                                                                                                                                  gene="rfaP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene="rfaQ"
```

gene

CDS

gene

CDS

gene

```
281631
                                                                                                                                                                                                                                                                                                                                                                                                                                       281691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        281511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      281211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGTGGGCAGCGCAGCTTACTTTGGCTGGGAATACAGCAATGGCGCGCCCCTGG 280911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    280971
                                                                                                                                                                                                                                                                                                                                        e,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                     7254. 78531
/locus_tag="kdtk"
/locus_tag="2.457"
/EC_number="2.-.-."
/function="enzyme; Surface polysaccharides and antigens"
/note="Escherichia coli K-12 ortholog: b3633; Escherichia coli 0157:H7 ortholog: z5057"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC 897
                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                     coli O157:H7 ortholog: 25057"
  /oodon start=1
  /transI table=1
  /producE="3-deoxy-D-manno-octulosonic-acid transferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGACCGGGCTGAACTCCTGTTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCCAGTATAAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGTCGATGATTAAAACGTCAAAAGGCAAAAGGAACAGGTCGTAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         281510 rrracgradererekaracgeeeeeegaerearekeraceeeeerearekergee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receasoriningerschaasanessenancerecerentaaseesesen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACACCGGGAGTTCATCATGACTTAGAATGGTGTTTGCCTACCTGCTGACATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tritaagccriciceccagecreresecaarcaacaccarsaccaccresecreseres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGACCGGGCTGAACCTCCTGCTGCTGCAATGCCGCCAGATCATCAACATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITITITAGCGTGCCTGAAACGCTGCGACAGTAGCGTATTGTGGCACAAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTAT - - CCGGCCGGTGGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ecrecirioccorecerroceaecerariricecercaerearicarireaerer
                                                                                                                                                                                                                                                                                                                                                                                          1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTACGTAGCTCTCAATACGCCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACACTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       reaceccagaarcagcegreecaregraaaagcagcaaacecerrrerrerrerr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rrarceceececestercrarrecresecrreseaccesacrescearrearing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGGTTGGCGTGGGGTT-GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ceartaacarecceaeareresarcescraacaesceaeceaacereccrecces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCCAGICITITIGCIGCIGAAACAICGGGIAATCIGCCICIIAAACCACGIAAAAICGI
                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                           Length 301566;
                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                        23;
                                                                                                                                                                                                                                                                                      Score 1128.2;
Pred. No. 0;
0; Mismatches
/locus_tag="c4457"
                                                                                                                                                                                                                                                                                         94.0%;
larity 97.8%;
Conservative
```

임 à g  $\delta$ d ò 셤 ે g ò 셤

```
/product="possible lipoprotein"
/protein_id="CAD07713.1"
/protein_id="CAD07713.1"
/brotein_id="CAD07713.1"
/brafe="springshape: controlled by the controlled
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              / LTAIN 14 LOID - MADINGLE TO STATE OF STATE SORE THE SORE THE SORE THE STATE ADDRAGER LOID - MADINGLE TO STATE OF STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="orthologue of E. coli ygiB (YGIB_ECOLI); Fasta hit to YGIB_ECOLI (234 aa), 97% identity in 223 aa overlap. Contains a possible N-terminal signal sequence."
                                                                                                                     /gene="tolc"
/gene="tolc"
/gene="tolc"
/note=="similar to Salmonella enteritidis outer membrane
profesi Tolc precursor tolc SW:TOLC SALEN (654001) (491
aa) fasta Scores: E(): 0, 99.0% id In 491 aa, and to
Escherichia coli outer membrane protein tolc precursor
tolc or mtcb or muka or refI SW:TOLC ECCLI (F02930) (495
aa) fasta scores: E(): 0, 89.7% id in 495 aa
orthologue of E. coli tolc (TOLC ECCLI); Fasta hit to
TOLC ECCLI (495 aa), 90% identity in 495 aa overlap"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / yene="STY3366"
/note="Fasta hit to YJFC_ECOLI (387 aa), 50% identity
392 aa overlap
Orthologue of E. coli ygic (YGIC_ECOLI); Fasta hit to
YGIC_ECOLI (386 aa), 94% identity in 386 aa overlap"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="PS00013 Prokaryotic membrane lipoprotein lipid attachment site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="outer_membrane protein TolC precursor"
/protein id="CAD07712.1"
/db_xref="GI:16504264"
/db_xref="GOA:0823N8"
/db_xref="GOA:0823N8"
                                              note="synonym: STY3364"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1757. .2428
/gene="STY3365"
1757. .2428
/gene="STX3365"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1835. .1867
/gene="STY3365"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'gene="STY3366"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="STY3367"
                                                                                    .1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          transl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               / trans1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Salmonella enterica subsp. enterica serovar Typhi
Salmonella enterica subsp. enterica serovar Typhi
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae, Salmonla.

I (bases 1 to 258050)
Salmaproteobacteria; Enterobacteriales;
Enterobacteriaceae, Salmonla.

Nain, J., Churcher, C., Mungall, K.L., Bentley, S.D., Holden, M.T.G., Sebahlia, M., Baker, S., Basham, D., Brocks, K., (Chillingworth, T., Commerton, P., Cronin, A., Davis, P., Davis, R.M., Dowd, L., Nitter, J., Commerton, P., Cromplas, K., Krogh, A., Larsen, T.S., Learher, S., Moule, S., O'Gaora, Parry, C., Quall, M., Rutherford, K., Simmonds, M., Skelton, J., Stevens, K., Whitehead, S. and Barrell, B.G.
Complete genome sequence of a multiple drug resistant Salmonella enterica serovar Typhi (T18)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     280610 GGTGGAGGGGTGTTAGCATGCGAGGCATGCGTG-AAAATAATGTCGGATGCGGCGTA 280552
                                                                                                                                                                                                                                                                                                                                                                                            280731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          280730 TGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATG 280671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        280611
                                                                                                                                                                                                                        280791
                                          280910 CGCAATTGATCTTAAATCGCTGGCCTCCACTCAATCGCGTCGACATTTGTTCCAGCGCGC 280851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL627278 Salmonella enterica serovar Typhi (Salmonella typhi) strain CT18, Complete chromosome; segment 14/20.
AL627278 AL513382
AL627278.1 GI:16504263
                                                                                                                                                                                                                                                                                                            1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAAATAATGTCGGATGCGGCGTA 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Details of S. typhi sequencing at the Sanger Centre are available on the World Wide Web.

(URL, http://www.sanger.ac.uk/Projects/S_typhi/).

1. 258050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Salmonella enterica subsp. enterica serovar Typhi"
                                                                                                                                                                                                                                                                                                                                                                     280790 ATTCATCATGCCGCAGCAGCCACAACTGATGCAGTATATCGTGCTCGGCGTCACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTGGTCGATATTATTGTGATGGGTTACGCCACCCTTGCTCAACGGATTGCTCTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        280670 GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTATTATGCT
                                                                                                                                                                                                                   280850 AGTTTTTGTGAATCTCACCAATCCCAAAGTATTGTGTTTCTGGCGGCGCGCTATTTCCGCA
                                                                                                                                                                                                                                                                                                            ATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATTCGTGCTCGGCGTCACCACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCT
                                                                                                                                   AGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [bases 1 to 258050)
Parkhill, J.
Direct Submission
Submitted (25-OCT-2001) Submitted on behalf of the Salmonalla sequencing team, Sanger Centre, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 158, UK
E-mail: parkhill@sanger.ac.uk
/mol_type="genomic DNA"
/strain="CT18"
/db_xref="taxon:90370"
69. .1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               280551 AAC 280549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1198 AAC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21534947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Notes:
                                                                                                                              868
                                                                                                                                                                                                                                                                                                            .
80
13
80
80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 10
AL627278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
```

ö d ņ

```
62.9%;
llarity 78.6%;
Conservative (
                                                                                                                                                                                                                                                                                                 LATKK"
7847. .8488
                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
hes 927; Conserv
                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       247608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             247668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       247308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            247428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              247488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 247548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   247728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           247908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 247968
                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음 중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon start=1
/codon start=1
/trans] table=1:1
/product="putative membrane protein"
/product="putative"
/product="putative"
/product="putative"
/product="putative"
/protein_id="CAD0776.1"
/db_xref="GA040808"
/db_xref="GOA.69K08"
/db_xref="SOA.69K08"
/db_xref="
                     / gene="Grindone of B. coli ygiD (YGID_BCOLI); Fasta hit to YGID_ECOLI (271 aa), 87% identity in_266 aa overlap." (Codon, Start=1 (271 aa), 87% identity in_266 aa overlap." (codon, Start=1 (271 aa), 87% identity in_266 aa overlap." (codon, Start=1 (271 aa), 87% identity in_266 aa overlap." (codon, Start=1 (271 aa), 87% identity in_266 aa overlap." (codon, Start=1 (271 aa), 87% identity in_262 aa overlap." (codon, Start=1 (271 aa), 87% identity in_262 aa overlap." (codon, Start=1 (271 aa), 87% identity 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ODTFYNGHDMINKRGYLMGIRETPRGTFTAVGGGHWYBEDMGGILADHKLPRGFLD
ASHBSIBTWAGTVLRVGKRDYRKEDGIHWHTRDDI IBVDKSGRWYDWDLTKILDP
MRDALLGALDAGAVCWNDLAHAGGGALEPDTPYGDALGVGAGRNWAHWSIAYDAK
DDSIILSSRHGGIVKTGRDKGWWWILAPSKGMWKDLASKLLKPVDDHGKPLTCDENGK
CKDTDFDFTYTGHTAMLSSKGTLTVFDNGDGRGLEQPALPTWKYSRFVBYKIDEKKGT
YKQVWBYGKERGYDFYSPITSVVBYQKDRDYWFGFGGGSINLFDVGKFTNGKLNBIDYK
TKEVKVBIDVLSDKPNGTHYRALLVHPTQMFK"

/gene="dsbA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Orthologue of E. coli ygiE (YGIE ECOLI); Fasta hit to YGIE ECOLI (257 aa), 93% identity in 257 aa overlap. Contains multiple possible membrane spanning hydrophobic domains"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Similar to Enterobacter amnigenus disulfide isomerase dsbh TR:09XDP1 (ENBL:AP012826) (222 aa) fasta scores: E(): 0, 90.1% id in 222 aa" (codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aa)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /noce="Similar to Klebsiella pneumoniae arylsulfate sulfotransferase assT TR:P97036 (EMBL:U32616) (598 a fasts scores: E(): 0, 86.8% id in 598 aa" /codon_tastt=1 /transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="synonym: STY3371"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6004. .7800
/gene="STY3370"
/note="STY3370"
6004. .7800
/gene="STY3370"
complement (3659. .4489)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4588. .5361
/gene="STY3368"
4588. .5361
/gene="STY3368"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7820. .8491
'gene="dsbA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         domains'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
CDS
```

```
247787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              247847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      247667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           247907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     247188 AGGAACAGGGTGGCTATCGCGCCCCCATTGAGTGCGCCAGGATATAACGCTTACGCCAC 247247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          247367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       247427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            247547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              247727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   247967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          248027
/product="disulfide isomerase"
/protein id="CAD07718.1"
/bx xref="d1:16504270"
/db xxef="G1:16504270"
/db xxef="G2:30823N5"
/db xxef="SPTREMBL:0823N5"
/db xxef="SPTREMBL:0823N5"
/translation="WSSKMITSLFKSVUTAALVTPFAASAFTEGTDYMVLEKPIPNA DKTLIKVFSYACPFCYKYDKAVTGPVSDKVADLVTFTFHLETKGSYGKQASEVFAVL IAKDKAAGISHPDARAGOFKXARFAMYTAYHOKKERWEDGKDPAAFIKTGLDAAGMSQA DPEAALKDPAAGISHPDAAGMSQA DPEAALKDPAAGISHPDAAGMSQA SPEAALKDPAAGISHPDAAGMSQA SPEAALKDPAAGISHPDAAGMSQA SPEAALKDPAAGISHPDAAGMSQA SPEAALKDPAAGISHPDAAGMSQA SPEAALKDPAAGISHPDAAGMSQA SPEAALKDPAAGISHPDAAGNSQA SPEAALKDPAAGISHPDAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGISHPAAGIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247788 giigagrciriciccadaricadcaccarcaaraccardacadacacrrarcaaccarda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acheeneedcenceeacheeenacechrinicecechcencancentrieaaanren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               regregardargararcaaaacegagargaaaaggrearaeeeeegerar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAAAACGGACAAAGCGCACCGGAATGTTATCCACGCCGATAAACTCCGCCTCTTCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rcaceccaaaarcegreacecececaraecaaaaececeaaaacecarrrerr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTTTTAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCACAAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541 ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aaccaaggacitrcccatedccitrgaatggrectrcccaactactactactcr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITAACGCIGICGCCAGGCICTGGIGCAATCAACACTATGACCACCTCGCTCAACAACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      247848 ATATCGTGGCGGGCGGCCTCTATCGCCGGGCTCCAGACCGGGCTGGGGATACATATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGGTTTGGGTTTGGG-ACGCTATTTCCCCGCTCAGTGATTGCGTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  247248 GACCCCGGCTCAATTTCCTGCTGCCAGAACGCCGCTAAGTCCTCAACATAATCGTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rrracaraacrercaareceeecaeaacaaareaceareereeareereeareeree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCCAGTCTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 receasitearitriscriscrisaaacaressistricesecricerraceasitaaaresr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTATCCGGCCG--GTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGTGGGCAGGCGCGCCTTACTTGGCTGGGAATCCAGCAGTGGCGCGCCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAATGGGCTGGCGCGGCTTATCTTATCTGGCTGGGTATCCAGCAATGGCGCGCCCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCAATTGACCTTAAATCGCTGGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 AGAAATAATGTGGAGGATCGCACCGCCCATCGAATGTGCCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGAAAACGGACAAAGCGCACCGGAATGTCATCCACCACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACGCCAGAAATCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 754.6; DB 1; Length 258050;
Pred. No. 1.7e-223;
0; Mismatches 249; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      838
```

ò 임 ò 엄 ò d à 쉽 ò d

```
/ LTAIR 1 & LOTE "MEESRET IGLTTS IAF SVQAANI DEYI KQLPAGANLALMVQKIG
APARAIDYHSQQMALPASTQKVI ITALAALI QLGBDFRFTTILETKGNVDNGTLKGDLI
APARAIDYHSQQMALPASTQKVI ITALAALI QLGBDFRFTTILETKGNVDNGTLKGDLI
SAPPAALI VDRNGFSVSI YSAQKPNDLAFIRVAS YYPVIMEQVRTLDRGSADAQVCE
LDVVPGDLNRYTLTGCL PQRADPLPLAFAI QDGAS YAGAILKQELKEAGI ITYRGTLLA
QTQNBERDTITVASKQSAPLHDLKINLKKSDNIADTVFRMIGHVRFNVPGTWRAGSD
AVROTLIROQAGID LGRYTI I ADGSGLSRHNI JAPATMQVLQY I AQHDNELNF SMLPL
AGYDGSLQYRAGLHQAGVDGKVSAXTGSLQGVXNLAGFI ITTASGQRMAFVQYLSGYAV
SDKLFKPGMTVVDLGAAPGGWSQYVVTQIGGKGRIIACDLLPMDFIVGVDFLQGDFRD
ELVMKALLERVGDSKVQVVMSDMAPNMSGTPAVDIPRAMYLVELALDMCRDVLAPGGS
FVVKVFQGEGFDEYLREIRSLFTKVKVRKPDSSRARSREVYIVATGRK"
                                                                                                                                                                                                                                                                                                                    /product="conserved hypothetical protein"
/protein id="AAO70751.1"
/brotein id="AAO70751.1"
/dx xxef="ig1:2913913914"
/translation="WYPPFOSQRKOKYTWNLSTKQKOHLKGLAHPLKPVVMLGNNGLTE
gyllation="WYPPFOSQRKOKYTWNLSTKTLIVDAIVRETGACNVQVIGKTLVLYRPTK
gyllatibQAlleHHBLIKVKIASEDRETKTLIVDAIVRETGACNVQVIGKTLVLYRPTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /transl_table=11
/product="transcription elongation factor"
/protein_id="AAO70755.1"
/protein_id="AAO70755.1"
/bxotein_id="AAO70755.1"
/bxotein_id="C1:29139185"
/bxanslation="MAAIPWTLKGAEKLREELDFLKSVRRPEIIAAIAEAREHGDLKE
NAEYHAAREQQGFCEGGRIKDIEAKLSNAQVIDVTKMPNNGRVIFGATVTVLNLDTDEE
OTYRIVGDBADFKQNLISVNSPIARGLIGKEQDDVVVIKTFGGDVEYEVLKVEYL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /trānslation="MKFVDEASILVVAGDGGNGCVSFRREKYIPKGGPDGGDGGDGGD
VWMZADENLNTLIDYRFEKSFRAERGQNGASRDCTGKRGKDVTIKVFVGTRVIDQGTG
ETMGDMTKHGQRLLVAKGGMHGLGNTRFKSSVNRTFRQKTNGTPGDKRDLLLELMLLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DVGMLGMPNAĞKSTFTRAVSAAKPKYADYPFTTLVPSIGOVVRMDSEKSFVVADIPGILI
BGAAEGAGLGIRFLKHLERCRVLLHLIDIDPIDGSDPVENARIIIGELEKYSQDLAAK
PRWLVFNKIDLMDKSEAEEKAKAIAEALGWEGKYYLISAASQLGVKDLCWDVMTFIIE
NPIAQAEEAKQPEKVEFMWDDYHRQQLAEVEEDADDDWDDDWDEDDEEGVEFIYKR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(3573. 4745)
/locus_tag="3218"
complement(3573. 4745)
/locus_tag="13218"
/locus_tag="13218"
complement(5518)
salmonella typhi CT18"
                                                                                                                                                             /locus tag="13215"
/note="corresponds to STY3476 from Accession AL513382:
Salmonella typhi CT18"
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /locus_tag="t1217"
/note="corresponds to STY3479 from Accession AL513382:
Salmonella typhi CT18; D-alanyl-D-alanine
carboxypeptidase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="corresponds to STY3477 from Accession AL513382: Salmonella typhi CT18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  product="probable GTP-binding protein"
/protein_id="AAO70754.1"
/db_xref="G1:29139187"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /trans]_table=11
/product="penicillin-binding protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PPADQRNRRIPLVRFESRLYKDIYQNN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="AAO70753.1"
/db_xref="GI:29139186"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /locus_tag="t3216"
complement(1285. .1761)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (1285, .1761)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (4761. .5726)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /locus_tag="t3216"
                                                                                                                  /locus_tag="t3215"
797. .1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /locus_tag="t3217"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start≈1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'codon_start≈
'transī table
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="greA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'gene="greA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2009. 3442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ERKISLPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
   248028 CGCTATCGATTCTCGCTTCGCCCAGACGCAATCGCCGGGTCGGCTGTTCAAACGGGC 248087
                                                                                                                                                 248147
                                                                                                                                                                                                                                                                                                                                                                                     248267
                                                                                                                                                                                                                                                                   248207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 248268 GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAAGCGTTTGGTTCGTTGTTTATGCT 248327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Salmonella enterica subap. enterica serovar Typhi Ty2, section 12 of 16 of the complete genome.
AE016845 AE014613
                                                                                                                                                                                                                                                                                                                             1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'codon start=1
'transI_table=11
'product="cell division protein"
'protein=4A070750.1"
'protei="d=AA070750.1"
'db_xref="d1:29139183"
'translation="WIGKKRSASSSRWLQEHFSDKYVQQAQKKGLRSRAWFKLDEIQQ'
                                                                                                                                                                                                              958 ATTCATCATGCCGCAACAGCGGCAACTGAATGCAGTATATCGTGCTCGGCGTCACCACTAT 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                            1078 GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCT 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Salmonella enterica subsp. enterica serovar Typhi Ty2 Salmonella enterica subsp. enterica serovar Typhi Ty2 Salmonella enterica subsp. enterica serovar Typhi Ty2 Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales; Enterobacteriaceae; Salmonella.

1 (bases 1 to 299991)

1 (bases 1 to 299991)

2 (bangi, W., Liou, S.R., Plunkett III, G., Mayhew, G.F., Rose, D.J., Burland, V., Kodoyianni, V., Schwartz, D.C. and Blattner, F.R. Comparative Genomics of Salmonella enterica Serovar Typhi Strains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .299991
/organism="Salmonella enterica subsp. enterica serovar
Typhi Ty2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             locus tag="t3214"
/note="corresponds to STY3475 from Accession AL513382:
Salmonella typhi CT18"
                                                                                                                                 248088 GATATITGICAARCTAAACCAAACCCAAAAGTATIGICTITCTIGCCGCCCTGTTTCCGCA
                                                                                                                                                                                                                                                                   248148 ATTCATCATGCCGCAGCAACCGCAACTGGCGCAGTACCTCATTCTCGGCGTCACCACGAT
                                                                                                                                                                                                                                                                                                                             TGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATG
                                                                                                                                                                                                                                                                                                                                                                                  898 AGTITITGIGAATCICACCAATCCCAAAAGTATIGIGITITCIGGGGGGGCGCTAITTCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Deng, W., Liou, S.-R., Plunkett, G. III, Mayhew, G.F., Rose, D.J., Burland, V., Kodoyianni, V., Schwartz, D.C. and Blattner, F.R. Direct Submitssion submitted (25-SEP-2002) Laboratory of Genetics, University of Wisconsin - Madison, 445 Henry Mall, Madison, WI 53706, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                248328 deradecececrecrederedecadacacecerana 248366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1138 GGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAA 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . Bacteriol. 185 (7), 2330-2337 (2003) 2531367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /sub_species="enterica"
/db_xref="taxon:209261"
complement(83...709)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'mol_type="genomic DNA"
'strain="Ty2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                locus tag="t3214"
complement(83...709)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  serovar="Typhi"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12644504
2 (bases 1 to 299991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene="ftsJ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="ftsJ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ty2 and CT18
                                                                                                                                                                                                                                                                                                                             1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
AE016845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
```

CDS

FEATURES

TITLE

```
. 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      778
                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 132663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      132963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    132603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    133023
                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           132423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132483
                                                                                                                                                                                                                                                                                 132243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        요
장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                        ò
                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="octaprenyl-diphosphate synthase"
/protein_id="AAO70758.1"
/protein_id="AAO70758.1"
/bcotein_id="AAO70758.1"
/bcotein_id="AAO70758.1"
/translation="WILEKINELFADMAGVNATILEGLNSDVOLINOLGYYIISGGG
KRIRPMIAVLAARAVGYGNAHYTIAALIEFIHTATLLHDDVVDESDMRRGKATANDA
FGNAASVIVGDFIYTRAFQMATSLGSLKVLEVMSBANNVIBAGBTLQLMNVNDPDITE
BNYRVIYSKTARLFEAAAQCSGILAGCTPEQEKGLQDYGRYLGTAFQLIDDLLDYSA
DGEHLGKNVGDDLNSCKPTLFLLHANKHGTPEQSAMIRTAIEQGNGHLLEFVLEAM
TCGSLEWTRQRAEBERADKAISALQILPDTFWREALIGLAHIAVQRDR"
                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="AAO70756.1"
/db_xref="G1:29139189"
/tb_xref="G1:29139189"
/translation="WAHKAGSTRNGRDSBAKRLGVKRFGGBAVLAGSIIVRQRGTK
FHAGTNVGCGRDHTHPAKADGKVKFEVKGPKNRKYISIVAE"
complement (6133. .6444)
                                                                                                                                                    / ringlation="MKQQAGIGILLALTTAMCWGALPIAMKQVLBVMEPSTIVFYRRL
MASIGLGAILAVKRKLPPLRIFRKPRWLVLLAIATCGLFGNRILFSSSLQYLSPTASQ
VIGQLSPVGMWVASVFILKEKORGTQVIGALMLLSGLVMFFNTSLIEIFTRLTDYTWG
                                                                                                                                                                                                  VIFGVGAAMVWVSYGVAQKVILRRIAŠGOJIETLYTICTIALIPPAKPMVIAQLSDWO
LACLI FCGLNTIVGYGALABAMARWQAAQVSAIITLTPLFTILFSDLLSWAWPDFFAR
PMLNILGYLGAFVVVAGAMYSAIGHRIWGGLRKHETVVSQPRSGE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /trānslation="MYAVFQSGGKQHRVSEGQTVRLEKLDIATGETIEFAEVLMIANG
EEVKIGVPFVDGGVIKAEVVAHGRGEKVKIVKFRRRKHYRKQQGHRQWFTDVKITGIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       locus rag="t3221"
/note="corresponds to STY3483 from Accession AL513382:
Salmonella typhi CT18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       locus tag="t3222"
/note="corresponds to STY3484 from Accession AL513382:
Salmonella typhi CT18"
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /locus tag="t3223"
/note="corresponds to STY3485 from Accession AL513382:
                                                                                                                                                                                                                                                                                                                                                  STY3482 from Accession AL513382:
                                             STY3481 from Accession AL513382:
                                                                                                                                                                                                                                                                                                                                                                             codon startil
(transl_table=11
'product="50s ribosomal_subunit protein 127"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 product = 150S ribosomal subunit protein L21"
protein id="AAC70757.1"
db xref="G1:29139190"
                                                                                                             protein'
                                                                                         /transI_table=11
/product="putative_membrane
                                                                                                                         protein_id="AAO70755.1"
db_xref="GI:29139188"
                                                                                                                                                                                                                                                                                /locus_tag="t3220"
complement(5856. .6113)
             complement (4761. .5726)
/locus tag="t3219"
/note="corresponds to S'
Salmonella typhi CT18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /locus_tag="t3221"
complement(6133. .6444)
                                                                                                                                                                                                                                                     complement (5856. .6113)
                                                                                                                                                                                                                                                                                                                             /locus tag="t3220"
/note="corresponds to |
Salmonella typhi CT18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   locus tag="t3223"
907. .8194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /locus_tag="t3222"
/locus_tag="t3219"
complement(4761...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon start=
transI table
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      703. .7674
gene="ispB"
                                                                                                                                                                                                                                                                                                                     gene="rpmA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3703. .7674
'gene="ispB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene="rplU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene="rplU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7907. .8194
/gene="nlp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7907. [81]
/gene="n]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
```

```
132242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               132362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       132422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            132482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           132782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             132842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       132302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 132542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      132602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           132662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                132722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        132902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             132962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  133022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        133082
                                               /transl_table=11
/product="Ner-like regulatory protein"
/protein_id="Na070759.1"
/db_xref="GI:29139192"
/translation="MESKLIDWHPADIIAGIRKKGTSWAAESRRNGLSSSTLANALTR
                                                                                                                                                                                                                                                          ٠.
د
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                837
                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             957
                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                         132183 AGGAACAGGGTGATCGCGCCCCCATTGAGTGCGCCAGGATATAACGCTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               132303 TGATCGACATGACCCCGATGCGGGTCCGATAACATCCGCCCGGGAGCGCCCTTGACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTTTGCGTCGTGCCTGACACACACGCGCCAGTAGCGTATTGTGCGCACAAAAACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        132723 AACCAAGGAGTTTCGCATGACCTTTGAATGGTGGTTCGCCTATCTACTGACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          132903 Achdehededehedeachdedradechchriticedechderchandentrifaaarter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCTATCGATACTCTACTCTCGCCCAGACGCAATCGCGGGGTCGGCTGTTCAAACGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                       GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACCCCGGCTCAATTTCCTGCTGCCAGAACGCCGCTAAGTCCTCAACATAATCGTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    132363 regrecareareaacararcaaaacceacareaaaaccraracaccacrarr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITACGIAGCICICAAIACGCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rtracaraacreteaargeeeecaeeacaaareaceareereeereerreereereearre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ceaaaaceeacaaaececaceeaaarerrarccacecearaaacrcceccrcrrccec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      132543 reaceceaaaarceercaeececearaecaaaaeceecaaaeceecaaaceearrirerri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           receasiteritinschecteaacaressirritesseresteritaseasitaaaares
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTTTAGCGTGCCTGAAACGCTGCGACAGTAGCGTATTGTGGCACAAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACAACACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGTGGGCAGGCGCCCTTACTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gaaardoocrooccoocritárcitaficitoocroocradoraficaadaardocococcocado
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGITITITGIGAATCICACCAATCCCAAAAGIATIGIGITITCIGGCGCGCTAITITCCGCA
                                                                                                                                                                                                                                                                                                               <u>AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATAACGGTTTACGCCAC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCCAGTCTTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTATCCGGCCG--GTGCCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     132843 Ararcengececaecescricrarcecesscriccasacescrissesaracaracer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGGTTGGCGTTGGG-ACGCTATTTCCCGCTCAGTGATTGCGTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAAAACGGACAAAAGCGCACCGGAATGTCATCCACACACTAAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                            3;
                                                                                                                                                                                                       Length 299991,
                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                          Score 754.6; DB 1;
Pred. No. 1.8e-223;
0; Mismatches 249;
CT18"
typhi
                            /codon_start=:/
/transl_table
                                                                                                                                                                                                       Query Match
Best Local Similarity 78.6%;
Matches 927; Conservative
  Salmonella
```

 $\dot{\delta}$ 유 ò a ò a ò

```
/ transl_table=11
/ transl_table=11
/ product = "adenylate cyclase"
/ product = "adenylate cyclase"
/ protein_id="MAL22964.1"
/ db_xref="GI:1642264"
/ translation="MYLYETLEDWALDAMOPAEQOVYSLLPTLHY"
/ db_xref="GI:1642264"
/ translation="MYLYETLEDWALDAMOPAEQOVYSLLPTLHY"
/ db_xref="GI:1642264"
/ translation="MYLYETLEDWALDAMOPAEQOVYSLLPTLHY"
/ HEDLMPGYLDGWNPSGICGPRENDLORERGLIGRKCSLLESWAASLGVENSFLIDENR
FRHNRSGSLGGEDGOCSTQHILLIDEBFYRAYALAGKTLUMSWNFODEBEHYDDYWTL
/ AQGVLTPNRWLDLGGLSSLARBYRGASLWQLYKSIDSPYKAULSCTDEBHYDDYWTL
/ AQGVLTPNRWLDGGLSSLARBYRGASLWQLYKSIDSPYKAULSCPYLKVC
/ RKLSRRANGSGNYCHDGGIVSTRKLYAAFBALDGPTRLDLUNRRCFYLKVC
/ RKLSRRANGSPODIOWLTKKLYAAFBALDGRYKTLNYOGISPDLSSPNIT
/ FIHVPPGRANRSGWYLYNRAPNWDSIISHOPLEYNRYLNYCHVAWAWRNGLLISFTHLF
/ IKGMGIUDDAMOPSFREDNOCHIGSIDLLYRNSWNEWRTHFNGDGAMIELLTING
/ GKMHQDAAPPDSYZVPCYSQHLRGLIGSTHNKLHGROAMIELLFUNG
/ GCWHQLAAPPRENCYCYSQHLRGLIGSTHNKLHGUNGWRNEWYLFFRUNG
/ GCWHQLPSPRENCHORSCNITILIBSNRAEWYHHGEGSKEELUNROVKLPSVVDGFASRG
/ IIOPFFREENGDEKGFNITILIBSNRAEWYHHGEGSKEELUNROVKEPVUGFASRG
/ IIOPFFREENGDEKGFNITILIDESNRAEWYHHGEGSKEELUNROVKEPVUGFASRG
/ IIOPFFREENGDEKGFNITILIDESNRAEWYHHGEGSKEELUNROVKEPVUGFASRG
/ IIOPFFREENGDEKGFNITILIDESNRAEWYHHGEGSKEELUNROVKEPVUGFASRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transl_table=11
/product="putative inner membrane protein"
/protein_id="Aali22785.1"
/brotein_id="Aali22785.1"
/db_xxef="id:16422505"
/translation="MADAFILIGITWAMVSLGFILINKLFCFISAGCLLSLCASMASF
QLWDASYWGRWGKVCPGLDVIISCDNYHFLYDLGWBLYGIAFLFFTALMLTCAAIILI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="putative RBS for STM3940; RegulonDB:STMS1H003880"
2951. .3304
/gene="STM3940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note="putative RBS for STM3941; RegulonDB:STMS1H003881"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="putative RBS for cyaA; RegulonDB:STMS1H003879"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="purative binding site for CRP, RegulonDB: STMS1H000108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (SW:CYAA SALTY)"
                                                           /organism="Salmonella typhimurium LT2"
mol_type="genomic DNA"
ferrain="LT2; SGSC 1412; ATCC 700720"
db_xref="ATCC;700720"
/db_xref="ATCC;700720"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="putative -10 signal for cyaA;
RegulonDB:STMLTH004631"
                                                                                                                                                                                                                                                                                                                                                                                                               for cyaA;
                                                                                                                                                                                                                                                                                                                                                                                                            /note="putative -35_signal
RegulonDB:STMLTH004631"
136. 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="cyaA"
/EC_number="4.6.1.1"
/note="adenylate cyclase.
                                                                                                                                                                                                                                                                                                                   'note="synonym: STM3939'
      location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bound_moiety="CRP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="STM3940"
2943. .2948
/gene="STM3940"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3486. .3491
/gene="STM3941"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene="STM3941"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="STM3941"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon start=1
trans1 table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1/transl_table=
                                                                                                                                                                                                                                                           .10. .2843
'gene="cyaA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'gene="cyaA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="cyaA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'gene="cyaA"
                                                                                                                                                                                                                                                                                                                                                                              gene="cyaA"
                                                                                                                                                                                                                      note="L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein bind
                                                                                                                                                                                                                                                                                                                                                    -35_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -10_signal
                                          source
                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCO
133083 GATATITIGICAAICIAACCAAAAGTATIGITTITICITIGICGCCCTGTITCCGCA 133142
                                                                                                                                                                                                                                                                              133203 TGTGGTGGATATGATTGTGATGACCGGTTACGCCACGCTGGCGCAGCGCATTGCCGCCTG 133262
                                                                                                                                                                                                                                                                                                                                                                                                     133263 GATTAAAGGACCAAAGCAGTGAAGGCGCTGAATAAAGCGTTTGGTTCGTTGTTTATGCT 133322
                                                                                                                                                       133143 ATTCATCATGCCGCAGCAACCGCAACTGGCGCAGTACCTCATTCTCGGGGGTCACGAT 133202
                                                                                                                                                                                                                      1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Enterobacteriaceae; Salmonella.

1 (bases 1 to 21692)

MCClelland, M., Sanderson, K.E., Spieth, J., Clifton, S.W.,
Latrealle, P., Courtney, L., Porwollik, S., Ali, J., Dante, M., Du, F.,
Hou, S., Layman, D., Leonard, S., Nguyen, C., Scott, K., Holmes, A.,
Stoneking, T., Muhaney, E., Ryan, E., Sun, H., Florea, L., Miller, W.,
Stoneking, T., Mhan, M., Waterston, R. and Wilson, R. K.
Complete genome sequence of Salmonella enterica serovar Typhimurium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence was finished as follows unless otherwise noted: all regions were double stranded, sequenced with an alternate chemistries or covered by high quality data (i.e., phred quality >= 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one m13 subclone.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AE008884 11near BCT 23-APR-2003 Salmonella typhimurium LT2, section 188 of 220 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Salmonella typhimurium LT2
Salmonella typhimurium LT2
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coding sequences below are predicted from manually evaluated computer analysis, using similarity information and the programs; GLIMMER; http://www.tigr.org/softlab/glimmer/glimmer.html and GeneMark; http://opal.biology.gatech.edu/GeneMark/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The analyses of ribosome binding sites and promoter binding sites were kindly provided by Heladia Salgado, Julio Collado-Vides and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EC numbers were kindly provided by Junko Yabuzaki and the Kyoto Encyclopedia of Genes and Genomes; http://www.genome.ad.jp/kegg/and Pedro Romero and Peter Karp at EcoCyc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (29-MAR-2001) Genome Sequencing Center, Department of Genetics, Washington University School of Medicine, 4444 Forest Park Boulevard, St. Louis, MO 63108, USA
COMMENT Supported by NIH grant 5U 01 A143283
                                                                                               ATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTAT
                                                                                                                                                                                                                      1018 TGTGGTCGATATTATTGTGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATG
                                                                                                                                                                                                                                                                                                                                             1078 GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ReguonDB;
http://kinich.cifn.unam.mx:8850/db/regulondb_intro.frameset
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The Salmonella typhimurium Genome Sequencing Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133323 GIAGGCGCCCCCTGCCTCGCCAAGACACGCCTGATA 133361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1138 GGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAA 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and Pedro Romero and Peter Karp at EcoC
http://ecocyc.PangeaSystems.com/ecocyc/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature 413 (6858), 852-856 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genome.
AE008884 AE006468
AE008884.1 GI:16422503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 21692)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21534948
                                                                                               928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
AE008884/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
CONSRIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
```

TITLE

COMMENT

4

```
19876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19336
                                                                                                                                                                                                                                        20176
                                                                                                                                                                                                                                                                                                                                       20116
                                                                                                                                                                                                                                                                                                                                                                                                                                 20056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTACATAACTCTCAATGCGGCCAGGACAATGACGATCGTCGGATCGTTGGAATCATTT 19936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19396
/translation="MKNVFKTLAVLTLFSLTGCGLKGPLYFPPADKNAPPPTKKVDS
QTQSTMPDKNDRATGDGPSQVNY"
6180. .7016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTAT 1017
                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               957
                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                        TGACGCCAGAAATCGGTCAGCGGCCCCATAGCAAAAGCGCCAAAACCCATTTCTCTTTGTT
                                                                                                                                                                                                                                        addalacaddordacharcacaccaccantalacadacacaddananaacacharacacad
                                                                                                                                                                                                                                                                                                                                                                                                                              Tearceachreacccearecearcearaacarcececeeacececrisaecace
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               regregargargargarancaaaacegagargaaaaagerearaegeearreagegrar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19515 ACTGGTGGGGCGTCGGACGCTCTTTCGCGCTCCCTCCTCCTCGCTTTTGAAATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                     121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ceaaaaceeacaaaeceeceeceaaarerracceaceecearaaacreceecrerrecee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rcccagrcanningcrgcrgaaacancggginincggccrcginaaccaggiaaaancgr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITITITAGGGIGCCIGACACACACGCIGCGACAGTAGCGIATIGIGGCACAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTTGCGTCGTCCTCACACACACACCCCCCACTACCCTATTGTGCCACAAAACAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541 ACACCGGGAGTICATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19635 gerichertrichedenrendendententantantantantandandentententententen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19575 ATATCGTGGCGCAGTGGCTTCTATCGCCGGACTCCAGACCGGGCTGGGGATACATATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGTCGATGATTAAGACATCAAACCCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aaccaggaattrogcargacctrraaargargericgccrarcracraacracr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGGCTCAACCCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTATCCGGCCG--GTGGCGTCTATTGCTGGGCTTCAGACCGGGACTGGCGATTCATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGGTTGGCGTGGGGTTGGG-ACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTTTTTGTGAATCTCACCAAAAGTATTGTGTGTTTTTGGCGGCGCTATTTCCGCA
                                                                                                                                                                                          1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCCAGTCTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                            Length 21692
                                                                                                                                            Indels
                                                                                         Score 753; DB 1; 1
Pred. No. 3.2e-223;
0; Mismatches 250;
                                                                                            62.7%;
larity 78.5%;
Conservative
                                                                                                                        Similarity
                                                                                                                     Local Simi
hes 926;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  838
                                                                                                                                                                                                                                        20235
                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                       20175
                                                                                                                                                                                                                                                                                                                                                                                                                                 20115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19395
                                                                                                 Query Match
                                                                                                                        Best Loca
Matches
                                                     gene
                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ያ ያ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
장
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                      /note="putative RBS for STM3942; RegulonDB:STMS1H003882"
4044. 4046
4044. 4066
4040. 4066
4040. 4066
4060. start=1
/codon_start=1
/product="putative cytoplasmic protein"
/product="putative cytoplasmic putative cytoplasmic cyto
                                        /product="putative inner membrane protein"
/protein id="AAL22566"
/db xref="GI:1642256"
/translation="MDVFIKGYYMSINNPILICVNKKRQIKLALFYSVVAIALMMSLF
/translation="MDVFIKGYYMSINNPILICVNKKRQIKLALFYSVVAIALMMSLF
DVVGSMVCVFLILLMIAGASAYMYSAFSGKPQLTLNGEGYTLHTTRLPIVYHHBI
DVVGSWYSDNTPVLAI FVKDVPELYCQRITNERMRNNFLSLLNKHESNRVMNISLNDLD
YDSDELQDIFKMAVARNLEQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /trānslation="MPKGTPLNRFAHLIKHLKNALRGVGIGSCIYVIIESIMHGTING
VBAAGVITISAVIGLLSBALDIRAKPRAPLILLHFLLCGGCVALMVAMLSALNHFPVN
ASVILITGALFFYUYLPESFILVRSGR"
complement (5244. 5766)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tränslation="MNDSEFHRLADALWLTIEERLDSWDGDSDIDCEINGGVLTLSFE
NGSKIIINRQEPLHQVWLATKQGGYHFDLKGDEWVCDRSGETFWDLLEQAATQQAGEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="putative RBS for STM3944; RegulonDB:STMS1H003884"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              product="putative frataxin family transport protein"
protein id="AAL22788.1"
db_xref="GI:16422508"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tocte="synonym: STM3946"
5946. .5951
gene="yift"
rocte="putative RBS for yift; RegulonDB:STMS1H003886"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="purative RBS for cyaY; RegulonDB:STWS1H003883"
complement(4867, .5262)
/gene="STTM394"
complement(4867, .5256)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /trans]_table=11
/product="putative outer membrane lipoprotein"
/protein_id="AAL22790.1"
/db_xref="GI:16422510"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          product="putative inner membrane protein"

protein_id="AAL22789.1"

db_xref="GI:16422509"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'note="pseudogene; 2 frameshifts"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="synonym: STM3943"
complement (4477. .4797)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  somplement (5257. .5262)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (4477. .4810)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (4805. .4810)
                                                                                                                                                                                                  /gene="STM3942"
/4040...400
                                                                                                                                                                                                                                                                    .040. .4045
gene="STM3942"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene="STM3944"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene="STM3945"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene="STM3944"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene="cyaY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3946. .6155
'gene="yifL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3952'. .6155
'gene="yifL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene="cyay"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="cyaY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pseudo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                               RBS
                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
```

27

셤 ò

ò 셤 ઠે d

```
/evidence=not_experimental
//transl_table=11
//transl_table=11
//transl_table=11
//transl_table=11
//transl_table=11
//transl_table=11
//transl_at_ion="MSSTVPDFELLEVERTRHFGRAABALYLTQSAVSFRIRQLE
//transl_at_ion="MSSTVDFELLEVERTRHFGRAABALYLTQSAVSFRIRQLE
NQLGYNLFTRHRNNTRLTTAGEKLLEYAETLANTWQARKEYAHTSHNEFSIGASAS
IWECMINAWLGRIYQLQEPQSGLQFEARIAQTGSGLYKQLHSRQLDLITTTBAPKMDEF
SRQQLSGHITTALYCSSPARKKSELNYIRLEWGPDFQQHETGLIAADEVPULTYSSAEL
ARQQLSGHITGSWLPVNWANEKGGLHTVADSATLSRPLYAIWLQNSDKYSLICDLIKT
041150
//transl_table_1
/transl_table_1
//transl_table_1
//tra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      / Drotein id="Mata | Mata | Ma
                                                                                                                                                                                                                                                                                                                /note="83% identity with E. coli hypothetical protein (YIPA) (SP:P22788) and 95% identity with amino acids 1-80 of E. coli possible regulatory protein (PSSR) (SP:P27826)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein id="AAF33485.1"
/db_xxef="GI:6960295"
/translation="MAESFTTTNRYPDNKHYPRGFSRHGDFTIKEAQLLERHGHAFND
LOGKREPPUFEEEKLFVAVCRGEREPYTDAERVWSKYMTRIKRPKRFHTLSGGKPQVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /producT="100% identity to B. coli ilvGMEDA operon leader peptide (ILVL) (SP:P03060)"
/protein id="AAF33486.1"
/db_xref="GI:6960296"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="%TMD1.95"
/codon start=1
/transl_table=11
/product="85% identity to E. coli hypothetical protein
/product="85% identity to E. coli hypothetical protein
(XIRB) (89:P22787); contains similarity to PFam family
PF01078 (Magnesium chelatase, subunit Chl1), score=351.8,
E=7.6e-102, N-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E. coli hypothetical protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'translation="MTALLRVISLVVISVVVIIIPPCGAALGRGKA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/transl_table=11
product="95% identity with |
(YIFE) (SP:P27827)"
                                                                                                                                        complement (1506. .2354)
/gene="STMD1.99"
complement (1506. .2354)
/gene="STMD1.99"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement (2824. .4344)
/gene="ylfB"
complement (2824. .4344)
/gene="ylfB"
                  product = "tRNA-Asp"
                                                                                                        'product="tRNA-Trp"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2461. .2799
/gene="yiff"
2461. .2799
/gene="yiff"
/note="SIMD1.96"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4696. ,4794
/gene="ilvL"
4696. ,4794
/gene="ilvL"
/note="SIMDL.92"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4934. .6580
/gene="ilvG" 1
4934. .6580
/gene="ilvG" 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon start=1/transI_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAEDYTEADD
                                                                                                                                             gene
                                                                    t RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
19156
                                                                                                                                                                                                                                                                                                                                                              TGTGGTCGATATTATTGTGATGATGGTTACGCCACCCTTGCTCAACGGATTGCTCTATG 1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BCT 11-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
Submitted (19-FEB-2000) Department of Genetics, Washington
University, 4444 Forest Park Avenue, St. Louis, Missouri 63108, USA
Submitted by:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Coding sequences below are predicted from manually evaluated computer analysis, using similarity information and the programs GLINMER (Salzberg, S., Deloher, A., Kasif, A. and White, O. (1998) NAR 26,544-549), and GeneMark (Lukashim, A.V. and Borodovsky, M. (1998), NAR 26,1107-1115.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Salmonella typhimurium LT2
Salmonella typhimurium LT2
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence was finished as follows unless otherwise noted: all regions were double stranded, sequenced with an alternate chemistry or covered by high quality data (i.e., phred quality = 30); an attempt was made to resolve all sequencing problems, such as compressions and repeats; all regions were covered by sequence from more than one mil subclone.
                                                                                                                                                                                                                     reregrecaraterioricardacecerraceceacacececacecere
                                                                                                                                                                                                                                                                                                            GATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genome Sequencing Center
Department of Genetics, Washington University,
St. Louis, MO 63110, USA
e-mail: sclifton@watson.wistl.edu or
jspieth@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Enterobacteriaceae, Salmonella.

1 (Dases 1 to 96086)
Washington University Genome Sequencing Center.
The Salmonella typhimurium Genome Sequencing Project Unpublished
2 (Dases 1 to 96086)
Waterston,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19095 GGTAGGCGCCCCCGGCGCCCAGACACGCGCGTGATA 19057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .96086
/organism="Salmonella typhimurium LP2"
/mol_type="genomic DNA"
/errain="SGSC1412"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAA 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Salmonella typhimurium fragment STMD1.
AF233324.1 GI:6960215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <1. .980
/product="23S ribosomal RNA"
/note="rrlC"</pre>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1072. .1191
/product="5S ribosomal RNA"
/note="rrfC"
1244. .1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:99287"
/clone="STMD1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NOTES:
                                                                                                                               1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1138
                                                                                                                                                                                                                     19215
                                                                                                                                                                                                                                                                                                            1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 13
STYSTMD1/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rrna
```

COMMENT

**LRNA** 

rRNA

FEATURES

```
181
                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                928
                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                          62204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                     62264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61784
                                                                                                                    음
                                                                                                                                                                                         ò
                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                         8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8 8
                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      के नि के
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6580. .6840.

| Gene="ilvM"
| Codon start=1
| Fransl_table=11
| Gene="ilvM" Gene of the feature of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / LTAING 14 LI ONE "NOTE SATTHORNWAGNRALMRATGMTDSDEGKPI I AVVNSFT
/ LTAING 14 LI ONE "NOTE SATTHORNWAGNRALMRATGMTDSDEGKPI I AVVNSFT
GFVPGHYHLERDLGKLVAEQIEASGGVAKEFYTI AVDDGIAMGHGGMLYSLPSRELIAD
SVEYMVNAHCADAMVCISNOENI FORMARAENI PVI FVNGGPWIAGRAFKLLSDKI I
KLDLVDAMIQGADPRKQLFLANGKRI VELTKRYYEQNDEGALPRNIT ASKAPENAMTLD AMG
GSILATHADANGRAI DFTMSDIDKLSRKYYEQUGCKVAPSTQKYMMEDNBAGGVLG
ILGELDRAGLIANNYKNYLGITLEQYILTOYDEAVKYMFRAGPAGIRTIQARS
ODCRWDSLDDDRAAGCI RSLEYAY SKDGGLAVLYGNFARNGCI VKTAGVDDS I LKFTG,
PAKYYESQDDAVEALIGGKYVEGVYNYNY RYEDREKAGGROGGGGRIL PPEFKSMGLGRAC
ALITDORFSGGTIGGLIGHVSPEAASGGTI ALIEDDDIANDELIGKSCACA
ALITDORFSGGTIGGLIGHVSPEAASGGTI ALIEDDDIANDELIGKSCACA
ARREAQERAGDKAMTPKORQVSFALRAYASLALEDGDTIANDI PRIKSIQLGISBABIA
ARREAQERAGDKAMTPKORQVSFALRAYASLATSADKGAVRDKSKLGG"

/transl_table=11
/product='92% identity with E. coli acetolactate synthase
I (ILVG) (SP:P00892) ; contains similarity to Pfam
family PF00205 (Thiamine pyrophosphate enzymes),
score=952.6, E=1.5e=295, N=1"
/protein_id="AAF33483.1"
/db_xxef="G1:6960293"
/translation="MAGAQWVHALABAQGVKTVFGYPGGAIMPVXDALYDGGVEHLLC
RHEQGAAMAGIGYARSIGTGVCTATSGPGAINLITGLADALLDSVPRATICGOVSAP
FIGTDAFQEVDVLGLACTGAISFLVQSLEELPRITAMAEREPVANARREPTRYANDERR
IQLASGELEPWFTITVANEATFFPQADVEQARQMIEQQKKPMLYVGGGVGMAQAVPALRK
                                                                                                                                                                                                                                                                                                                                    FIAYTOMPUTCTLKGGGAVEDYPYLGMLGHGTRAADANSTUR YGGYGHGYAPATRA
VTGKLNTFAPNASVIHMDIDPAEMNKLRQAHVALQGDLNSLLPALQQPLKIDAWRQSC
NTGKLNTFAPNASVIHMDIDPAEMNKLRQAHVALQGDLNSLLPALQQPLKIDAWRQSC
NTGSGAGGHGGHGFRIYAPLLKQLSERRPADSVVTTDVGQHQWWSAQHMTYTRPE
NFILSGAGGTGHAGFGLPAAVQAQVARPNDTVICISGGGSPWMVQELGTVKRKQLPLKI
VLLDNQRLGWYRQWQLFPQBRYSETTLTDNBDFLMIASAFGIPGQHTRKDQVEAAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MTTKKADYIWFNGEMVRWEDAKVHVMSHALHYGTSVFEGIRCYD SHKGPVVFRHREHMQRLRDSAKIYRFPVSQSIDELMEACRDVIRKNNLTSAYIRPLVF GODGWGWYDPPGYTTDVIJAFPWGAYIGAGATGAANSGANRAAANTIFTAAK AGGNYLASLLVGSREARHGYOEGIALDVNWGYISEGAGNLFFVXDGWLFTPPFTSSAL PGITRDAIIKLAKELGIEVREQVISRESLYLADEVFNSGTAABITPPRSSAL PGITRDAIIKLAKELGIEVREQVISRESLYLADEVFNSGTAABITPVRSVDGIQVGEG 7948 9798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="GTMD1.88"
/codon start=1
/codon start=1
/product=12 typhimurium dihydroxy-acid dehydratase (ILVD)
(SP:P40810); contains similarity to Pfam family PF00920
(Behydratase family), score=1023.9, E=3.5e-304, N=1"
/protein id="AAF33480.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S858. .7787

gene="ilvE"

fnote="STAD1.89"

(codon start=1)

fransI_table=11

fransI_table=12

fproduct="S. typhimurium branched-chain-amino-acid

product="S. typhimurium branched-chain-amino-acid

protein id="AAFP3481.1"

db_xxef="G1:6960291"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   858. .7787
gene="ilvE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7948. .9798
'gene="ilvD"
```

gene

CDS

gene

```
62205
                                                                                                                                                                                                                                                                                                                                                              62085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61305
                                                      7
                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1018 TGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATG 1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                777
                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                            62144 TGATCGACATGACCCCGATGCGGGTCCGATAACATCCGCCCCGGAGCGCCCCTTGACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAACAGGGTGGCTATCGCGCCCCCATTGAGTGCGCCAGGGTATAACGCTTACGCCAC
                                                                                                                                                                                                          GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                      GGCCCCGGCTCAATTTCCTGCTGCCAGAACGCCGCTAAGTCCTCAACATAATCGTTAAAA
                                                                                                                                                                                                                                                                                                             CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAAAACGGACAAAGGGGCACCGGAATGTTACCCACGCGATAAACTCCGCCTCTTCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITITGCGTCGTGCCTGACACACACACAGCGCAGTAGCGTATTGTGGCCACAAAAACAGAC
                                                                                                        TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTACATAACTCTCAATGCGGCCAGGACAATGACGATCGTCGCATCGTTGGAATCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61304 ATTCATCATGCCGCAGCAACCGCAACTGGCGCAGTACCTCATTCTCGGCGTCACCACATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCCAGTCTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61844 receasteartrisersersaaacaressirriesserriaserarasers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTTTTAGCGTGCCTGACACGCTGCGACAGTAGCGTATTGTGGCACAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACACCGGGAGITCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61724 AACCAGGGAGTTTCGCATGACCTTTGAATGGTGGTTCGCCTATCTACTGACCTCAACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601 TITAACGCEGICGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61664 GCTGAGTCTTTCTCCGGGTTCAGGCGCCATCAATACCATGACGACGTCTATCAACCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTATCCGGCCG - - GTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61604 ATATCGTGGCGCAGTGGCTTCTATCGCCGGACTCCAGACCGGGCTGGGGATACATATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                719 GCTGGTTGGCGTGGGGTTGGG-ACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61544 Acridoradacidicadacridadracicritriricacidericaricecritriridaaarier
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCAATTGACCTTAAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              898 AGITITIGIGAAICICACCAAICCCAAAAGIAITIGIGITITICIGGCGGCGCTATITICCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61364 GATATTTGTCAATCTAACCAAAACTATTGTCTTTCTTGCCGCCCTGTTTCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTICATICATICCOCAACAGCCGCAACTGATGCAGTATATCGTGGGCGTCACCACTAT
                                                      Gaps
                                                    .,
Length 96086;
Score 753; DB 1; Length 96
Pred. No. 4.4e-223;
0; Mismatches 250; Indels
Query Match
Best Local Similarity 78.5%;
Matches 926; Conservative
```

<pre># 10314 10712: contig of 399 bp in length  # 10713 11404: contig of 692 bp in length  # 11405 12261: contig of 857 bp in length  # 11405 12261: contig of 857 bp in length</pre>	gap or 13173: contigue of gap of 13934: contigue of gap of gap of gap of gap of gap of	14703; contig 15380; contig 15580; contig 15654; contig 16714; contig	17249: contig gap of 17863: contig 18508: contig	# 18509 19193: contig of 685 bp in length # 19194 19737: contig of 544 bp in length # 19738 20600: contig of 863 bp in length # 19738 20600: contig of 863 bp in length		gap of 22948; contig gap of 23682; contig gap of		gap of 26094: contice gap of 27015: contice gap of	* 27016 27740: Contig of 725 bp in length * 27741 28060: contig of 320 bp in length * 28061 28343: contig of 283 bp in length * 28061 28343: contig of 283 bp in length	* 28344 29016: contigo de 13 bp in length * 29017 29371: contigo de 1355 bp in length * 29372 29586: contigo de 1215 bp in length * 29372 29586: contigo de 1215 bp in length	<pre>* 29587 29691: contig of 105 bp in length  * 29692 30501: contig of 810 bp in length  * 29692 30501: contig of 810 bp in length  * 30502 31132: contig of 631 bp in length</pre>	31249:
	Qy 1138 GGTGGGGCTGTTAGCATCGGCGAGGCATGCGTGAAA 1176 	14 74 AC020874 TION Mus musculus clone F ION AC020874.2 GI:69802 DS HTG; HTGS PHASE0.	ORGANISM Mus musculus ORGANISM Mus musculus ORGANISM Selvaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; REFERENCE Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Mus. AUTHORS DOB Joint Genome Institute.	Sequencing of Mouse Unpublished 2 (bases 1 to 265383) DOE Joint Genome Institute. Direct Submission	0 Û Ö * * *	* and the order in which they appear is completely * arbitrary. Low-pass sequence sampling is useful for * identifying clones that may be gene-rich and allows * overlap relationships among clones to be deduced. * However, it should not be assumed that this clone	* will be sequenced to completion. In the event that  * the record is updated, the accession number will  * be preserved.  * 1 869: contig of 869 bp in length  * app of unknown length	* 870 1181: contig of 312 bp in length  * 1182 2202: contig of 1021 bp in length  * 2203 2960: contig of 758 bp in length	961 647 721	5434: cont. 6000: cont.	6992: CODE: 7785: CODE: 8367: CODE: 8367: CODE:	* 8368 9114: contig of 747 bp in length  * 9115 9729: contig of 615 bp in length  * 9730 10313: contig of 584 bp in length

QY 200 CAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATATTTTACGTAGCTCTCAATAC 259	QY 260 GCCCCGGGCAGATGACTACCACCGGTCATGGTGCTGTGCGCGAAAACGGACAAAGCGCA 319	OY 320 CCGGAATGTCATCCACCAGTAAACTCTGCTTCATCACGCTGACGCCAGAAATCAGTCA 379		440 GAAATCGGGTATCGCCTTTTTTAAACCGTGTTTTTTTTTT	Db 55368 GAPACATCGGGTAAICTGCCTCTTAAACCACGTAAAATCGTTTTTTTTAGGGTGCCTGAC 55427	QY         500 ACAACGCTGCGACGRAGGGTATTGTGGCACAAAATAGACACCGGGGGTTCATCATG 559           Db         55428 ACAACGCTGCGACAGTAGCGTATTGTGGCACAAAAATAGACACACCGGGAGTTCATCATG 55487	Qy 560 ACCTTAGAATGGTGGTTTGCCTACTGGACATCGATCATTTAACGCTGTCGCCAGGC 619		Oy 620 TCTGGTGCAATCAACACTATGACCACGTGGGTCAACGGTTATCGGGCGGTGGGG 677	Qy 678 TCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATGTGTGGCGTGGGGGTT- 736	Db 55608 TCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCCTGGTGGCGTGGGGTTG 55667	OY 737 GGGACGCTATTITCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGCGCGCGC	797 TACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCGCTGGAATTGACTTAAATCG	Db 55728 TACTIGATTIGGCIGGGAAICCAGCAGIGGCGCGCCGCIGGGAGCAAITGACCTIAAAICG 55787	57 CIGGCCICIACICAAICGCGICCACAITIGITCCCAGCGCGCACITITIGIGAAICICACC 916		OY 917 AATCCCAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATGTGCGCAA 973		;	LOCUS ABU15396 10253 Bp	GENOME ACCESSION AE015396 AE005674 VERSION AE015396.1 GT:24054379	KEYWORDS KALTER SOLITOR SHIP 301			AUTHORS Jin, O., Yuan, Z.H., Yang, F., Qu, D., Zhang, X.B., Zhang, J.Y., Yang, G., Yang, F., Qu, D., Zhang, X.B., Zhang, J.Y., Yang, F., Qu, D., Zhang, X.B., Zhang, J.Y., Yang, G.W.,		TITLE Genome sequence of Shigella flexmeri Za: insights into pathogenicity through comparison with genomes of Escherichia coli
												•															
																			٠								4; Gaрв 3
32878: contig of 411 bp in length gap of unknown length 34069: contig of 1191 bp in length	34694: contig of 625 bp in length gap of unknown length 35933: contig of 1239 bp in length	36920: contig of 987 bp in length gap of unknown length 37173: contig of 253 bp in length	gap of unknown length 37282: contig of 109 bp in length gap of unknown length	gap of gap of 52: contig	gar or mixmown rength 38678: contig of 226 bp in length qap of unknown length	38835: contig of 157 bp in length gap of unknown length 39561: contig of 726 bp in length	gap of 52: contiq gap of	41223: contig of 771 bp in length gap of unknown length	41864: contig of 641 bp in length gap of unknown length 42690: contig of 826 bp in length	gap of unknown length 42988: contig of 298 bp in length	gap or unknown length 43612: contig of 624 bp in length		gap of	gap of unknown length 47054: contig of 462 bp in length	gap or unknown lengen 47193: contig of 139 bp in length gap of unknown length	8027: contig of 834 bp in length gap of unknown length	8670: contig of 643 bp in length gap of unknown length 9511: contig of 841 hp in length	gap of	gap of contic	gap of unknown length 0776: contig of 652 bp in length	gap or unknown length 0905: contig of 129 bp in length gan of unknown length	1260: contig of 355 bp in length	2029: contig of 769 bp in length	, , ,	gap of mixilown rength 53140: contig of 846 bp in length gap of unknown length	2%; Score 699; DB 2; Le 3%; Pred. No. 4.2e-206;	Ο.
32468 32E 32879 340	34070 346 34695 359	35934 369 36921 371	37174 372		38453 386	38679 386 38836 395	39562 404	m	41224 418 41865 426	42691 429	42989 436	43613 4426	• •	46593 470	w	47194 48(	48028 486 48671 496	1 (2)	9	50125 507	50777 509	20906 513	51261 520	52030 523	52295 53.	Query Match Best Local Similarity 96.	Conservativ
* * * 1	·· (*)	(+ * * *	ε+ + + +	, (*) : * * *	* *	* * *	* * *	* *	* * *	* * 1	<b>*</b> * +	* * * *	* *	* * +	x * *	* *	* * *	* *	* *	* * 1	* * *	* *	* *	* *	* * *	Match ocal Simi.	748;

```
/transT_table=11
/product="orf, conserved hypothetical protein"
/protein id="ApA45330.1"
/db_xref="d1:24054382"
/db_xref="d1:24054382"
/db_xref="d1:24054382"
/db_xref="d1:24054382"
/db_xref="d1:24054382"
/db_xref="d1:24054382"
/db_xref="d1:24054382"
/db_xref="d1:24054382"
/db_xref="d1:24054382"
/db_xref="d1:2405482"
/db_xref="d1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /transl_table=11
/product="orf, conserved hypothetical protein"
/product="orf, conserved hypothetical protein"
/product="daN45331.1"
/db xref="d1:2404383"
/translation="MYESGHIAMLTGDSHKDVFMLRMFIPTSNGKISRHRYIFTIL
INFPAFLIIFFNDGBAGFLVIVSTIALHYLVINMNCQRLRDSGFIYIKIYVFGTLAV
INISTITMIARDFAGSGNGSNIFLICYFSTFSMLMLAPTDSSKQ"
complement (4397. .5287)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /trānslation="MDAKQTRQGVDLALAAYFIWGIAPAYFKIJYYVPADEILTHRVI
WSFFPMYLJASICRQWSYLKTLIOTPQKIFMLAVGAVLIGGNWLLFFWAVNNHHMLEA
SLGYFINDIVNIVLGMIFLGERFRRMQWLAVILAICGVLVQLWTFGSLPITALGLAFS
FAPYGLVRKKIAVEAQTGKLIETWKLLPVAAIYLFAIADSSTSHMQONPMSINLLIA
AGIVTTVPLLCFTAAATRLRISTLGFFQXIGPTLMFLLAVTFYGEKPGADKMVTFTFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            / F Tanslation="MKCKDDMSAVLTABQALKLVGEMFVYHMPFNRALGMELERYEKE
FAQLAFKNQPMMVGNWAQSILHGGVIASALDVAAGLVCVGSTLTRHETISEDELRQRL
SRMGTIDLRVDYLRPGRGERFTATSSLLRAGNKVAVARVELHNEEQLYIASATATYMV
                                                                                                                                                                                                             /gene="yight" SP3895"
/locus tag="%SP3895"
/locus tag="%SP3895"
/note="Residues 15 to 140 of 140 are 99 pct identical to residues 1 to 126 of a 126 aa protein from Bscherichia coli %L2 ref: NP_418261.1"
/codon start: /codon start: //trans1_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       //gune tag="SF3898"
//locus tag="Residues 1 to 161 of 161 are 100 pct identical to
//note="Residues 1 to 161 of a 161 aa protein from Escherichia
coli 0157:H7 ref: NP_312777.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        t
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gcuc= 7.35
/gcuc= ras-8F3896"
/note="Residues 9 to 146 of 146 are 95 pct identical to
residues 1 to 138 of a 138 aa protein from Escherichia
coli K12 ref: NP_418262.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /locus tag="SF3897"
/note="Residues 1 to 296 of 296 are 99 pct identical
residues 1 to 296 of a 296 aa protein RARD_ECOLI sp:
VASSYGMNPEFMPELKWSFGYPGAIIFMILAGLAPYLYFKRKNWL"
complement (3528. .3950)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /transT_table=11
/transT_table=11
/producE="orf, conserved hypothetical protein"
/protein_id="AAN45333.1"
/db_xref="GI:24054385"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transl_table=11
/producE=RarD protein"
/protein_id="AAN45352.1"
/db_xref="G1:24054384"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="yig1"
/locus_tag="SF3898"
complement(5339. .5824)
                                                                                                                                       /locus_tag="SF3895"
complement(3528. .3950)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (3922. .4362)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="SF3897"
complement(4397..5287)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement (5339. .5824)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (3922. .4362)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WVALAI FVMDAIYTQRRTSK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tag="SF3896"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'codon_start=1
'transl_table=:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           codon_start=1/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="yigg"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'gene="rarD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'gene="rarD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene="yig1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     locus.
                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /locus tag="SF3892"
/locus tag="SF3892"
/locus tag="Residues 1 to 448 of 448 are 98 pct identical to residues 1 to 448 of a 448 as protein from Shigella flexmer; ref: NP_085177.1"
/codon_start=1
/codon_start=1
/ransl_table=11
/protein_id="AAN45328.1"
/protein_id="AAN45328.1"
/protein_id="AAN45328.1"
/do xref="GT:24054380"
/translation="MFPDFFMHIGQALDLVSRYDSLRNPLTSLGDYLDFELISRCLAE SGTVTLARSRALDLEMWATWERKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREKEPHQITAREK
                                                                                Chases 1 to 10253)
Jin, Q. Shen, Y., Wang, J.H., Liu, H., Yang, J., Yang, F., Zhang, X.B., Zhang, J.Y., Yang, G.W., Wu, H.T., Dong, J., Sun, L.L., Xue, Y., Zhao, A.L., Gao, Y.S., Zhu, J.P., Chen, S.X., Yao, Z.J., Wang, Y., Direct Submission

Submitted (08-MAY-2001) Microbial Genome Center of Chinese Ministry of Public Health, 100 Yingxin Jie, Xuanwu Qu, Beijing 100052, P.R. China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MOVPVMLSAFQLENNRLTRLEVEESQPLVNAVWIDLVEDDDDER"
LRVQSELGGSLATRPELEDIBASARFREDDDGLHTHSFFFFEDAEDHAGNSTVAFTIR
DERVEFTRELPAFRLYRMRARSQSWUDGNAFELLDLFFFFFFTISQLADETBNIYSDL
EQUSRVINGEHGESPYDEALSTLAEUEDIGWKVR.CLMDTQRALNFLVRKARLEGGGL
EQAREILRDIESLLPHNESLFQKVNPLMQAAMGFINIEQNRIIKIFSVVSVVFLPPTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGNPALY POVKOVCOMELTSHLLTAAA FGTMKNSENELAEQLI EQTGDNTITLMNKGYYSTGLIAOWSLAGEHRHWIT PLAKGAQY YELGLIAOWSLAGEHRHWIT PLAKGAQY YELGLIAOWSLLYCH KKYSPQARKKNPELGY
EVTARLI VYTRKGKVCHLITSHYDAMR P PGEEMADLY SNRWET BLOYRET KQTWOLSR
LTLASKKELLYGENGYLLAYNLYNYOMI KWAEHLKGYMPNOLGS FSEGGGWYRMLM
TLQGAS PGRI PELMSDLASMGQLVKL PTRRGRAPPRVVKERPWKY PTAPKKSQSVA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /locus_tag="SF3893"
/note="similar to Escherichia coli K12 orf, conserved
hypothetical protein gi: 1790248 (162 aa). BLAST with
identity of 99% in 641 aa. This CDS has been disrupted by
inscriton. The sequence has been checked and is believed
to be correct."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /jeurs tag="SF3894"
//ocus tag="Residues 6 to 321 of 321 are 100 pct identical to
/note="Residues 1 to 316 of a 316 aa protein from Escherichia
coli O157:H7 EDL933 ref: NP_290445.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .10253
/organism="Shigella_flexneri 2a str. 301"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'product="Mg2+ transport, system I"
'protein id="AAN45329.1"
'db_xref="G1:24054381"
                                        Nucleic Acids Res. 30 (20), 4432-4441 (2002)
12384590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /serotype="2a"
/db_xref="taxon:198214"
complement(243. 2167)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement (243. .2167)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /locus_tag="SF3893"
/pseudo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        || Jocus tag="SF3894"
| S522. | 3487
| gene="corA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          locus_tag="SF3892"
[72. .1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cransl_table=11
472. .1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'codon_start=1
'transl_table=:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'codon_start≈1
'transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2522. .3487
/gene="corA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="yigE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pseudo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOLUCE
                                   JOURNAL
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
```

```
1129 (
                                                                                                                ò
                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     심
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10074
                                                                                                                                                                                                                                                                                                                                                                                                                                     /trānslation="MRTLQGWLLPVFMLPMAVYAQBATVKEVHDAPAVRGSIIANMLQ
EHDNPFTLXPYDTNYLIYTQTSDLNEBAIASYDWAERARKDEWKFQLSLAFPFWRGIL
GPDSYLGASYTQKSWWQLSNSEBSSPFRETNYEBQLFLGFATDYRFAGWTLRDVEMGY
HDSIGRSPDFTSRSWNRLYTRLMAENGNWLVEVKPWYVVGNTDDNPDITKYMGYYQLK
IGYHLGDAVLSAKGQYNWNTGYGGAELGLSYPITKHVRLYTQVYSGYGESLIDYNFNQ
TRVGVGVMLNDLF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="AAN45335.1"

/brotein_id="cd:24054387"

/translation="MINLESGAKOVLOETFGYQOFRPGQEEIIDTVLSGRDCLVVMPT

GGGKSLCYQIPALLINGLIVVVSPLISLMKDQVDQLQANGVAAACLNSTQTREQQLEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9834
                    /gene="pldA"
/gene="pldA"
/gene="pldA"
5971. 6440
/gene="pldA"
/gene="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           828
                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             locus tag="SF3900"
focts="Residues 1 to 604 of 604 are 99 pct identical to
residues 8 to 611 of a 611 aa protein from Escherichia
coli 0157:H7 EDL933 ref: NP_290454.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAAATCGTTTTTTTTAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAATAGACACCCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAATAGACACACGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10073 CAACCACGGTTATCGCGGCGCGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGTGTTGAAGTGGGCAGGCGCGCGTTACTTGATTTGGCTGGGAATCCAGCAGTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     reaagrerraaagreeccaeecececerracrrearrreecreecaarccaecaereece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caccacrascantrantrantractrasceretaretrantractrascereserentrati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTGTTTCTGGCGGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGCGCGCATTTTTGTGAATCTCACCAAATCCCCAAAAGTATTGTGTTTTCTGGCGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10133 ATCGATCATTTTAAGCCTGTCGCCAGGCTCGGTGCAATCAACACTATGACCACTCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAACCACGGTTAT---CCGGCCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCATATTGTGCTGGTTGGCGTGGGGTT-GGGACGCTATTTTCCCGCTCAGTGATTGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCATATTGTGCTGGTTGGCGTGGGGTTGGGGACGCTATTTTCCCGCTCAGTGATTGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCGATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 10253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon start=1
trans1 table=11
product="ATP-dependent DNA helicase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 690; DB 1; I
Pred. No. 1.4e-203;
0; Mismatches 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'locus_tag="SF3900"
5988. .8802
'gene="recQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 98.2%;
Matches 719; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    988. .8802
gene="recQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
Novel RhtB protein, useful for generation of L-homoserine resistance in
Escherichia bacteria and large-scale production of e.g. L-homoserine and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This is the DNA sequence the novel rhtB gene of Bscherichia coli K-12.
The rhtB gene maps at 86 min on the B. coli chromosome. The gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zakataeva NP, Aleoshin VV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 3; Page 10-11; 14pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-273530/24.
P-PSDB; AAY79298.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Livshits VA, 2
Tokhmakova IL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           L-alanine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aa294405 E. coli r
Aaa48442 E. coli L
Aas93395 DNA encod
Aa88415 DNA encod
Aca32708 Prokaryot
Aah84646 E. coli g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Prokaryot
E. coli g
Prokaryot
Prokaryot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Prokaryot
DNA encod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    encod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Prokaryot
Prokaryot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Prokaryot
Prokaryot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Prokaryot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prokaryot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Prokaryot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prokaryot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Prokaryot
                                                                                                                           March 28, 2004, 12:14:43; Search time 597.686 Seconds (without alignments) 8529.292 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                              1 agaaataatgtggagatcgc........atgtcggatgcggcgtaaac 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
DNA
DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Aca35868 | Aca53970 | Aca53970 | Aca48808 | Aca13399 | Aca885519 | Aca885510 | Aca885510 | Aca885510 | Aca674968 |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Aca18626
Aca51728
Aca36103
Aca48809
Aca48809
Aca51727
Aca51727
Aca51727
                                                                                                                                                                                                                                                                                                                                                                                                                 6747726
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                       3373863 seqs, 2124099041 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                      sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAS1727
AASB021
ACA32154
ACA35866
ACA48808
ACA13399
ACA13399
AASB5519
AASB5519
AASB5510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACA18626
ACA51728
ACA36103
ACA32157
ACA48809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAZ94405
AAA48442
AAS93395
AAS89415
ACA32708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACA19693
                                                                                                                                                                                                                                                                                                        IDENTITY_NUC
Gapop 10-0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            geneseqn2001bs:*
geneseqn2002s:*
geneseqn2003s:*
geneseqn2003s:*
geneseqn2004s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          genesedn1980s:*
genesedn1990s:*
genesedn2000s:*
genesedn2001as:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N_Geneseq_29Jan04:*
1: geneseon1980...
                                                                                      nucleic search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length DB
                                                                                                                                                                                                                  US-09-847-392-1
1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1200
1200
571.2
523.6
446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                      OM nucleic
                                                                                                                                                                                                                                                                     Seguence:
                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    000 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      συσυσ
```

						4140
2.4	243	<b>5</b> (			AASB8022	7 0 0 C
52	4.	- 1			AAR844/9	. 5
9 7	0 C	- r			AASSSC A	ARRESTO DNA encod
7 0	<b>,</b> a	٠.			מאסבתאניא	Acasage Prokaryo
0 0	01.0	J 4			AAS89410	Aas89410 DNA encod
9 6	67.8	4			AAS93398	Aas93398 DNA enco
31	ω.	N			ACA52910	Aca52910 Prokaryo
32	44.8	N			ACA44944	Aca44944 Prokaryo
33	41	н.				Aas93397 DNA enco
ω 4	m i	н,			7.0	Continuation (36
in u	133	11.1	110000	- 1	ACF6/35/ ACF65388 10	Continuation (33 o
o t	, ,	4 e	٠		١.	Acf70714 Photorha
- α n r	1 4	10			ACA42760	Aca42760 Prokaryo
o 0					AAS74968	8
40	10				ACA45284	34
41	0				ACD71734	4
42	0				ACD71736	9
. 4.	. 0				ACD71735	2
4					ACA43829	6
45	. 80				ACA27048	8
					ALIGNMENTS	
片	₽					
AAZ94405 ID AAZ	94405	standard;	d; DNA;	1200	0 BP.	
-	AAZ94405;					
18	-JUL-2000	(£1	irst entry)	<u>17</u>		
DE E.	coli rhtB	gene	e imparting	ting	homoserine resistance.	
;				1		onione looker to on the local section of the local section in the local section is the local section of the local section in the local section is the local section of the local
<b>Ξ</b> ι	omoserine re  -valine; L-1	resis -thre	tance; onine;	rhtB 88.	gene; L-homoserine; L	
E	scherichia	coli				
XX FH Key FT CDS FT FT FT	<u>ج</u> ي		Location 5571. /*tag= /note= (minus 3"	cion/Quali .1171 J= a S= "a DNA us the sto	halifiers DNA sequence corresponding stop codon) is specifical	ng to the coding region ally claimed in Claim
EP9	994190-A2.					
19	-APR-2000.					
70	-SEP-1999;	oı	99EP-00118	18581	1.	
13	-OCT-1998;	U1	98RU-00118	1842	ъ,	
<u>ه</u> کام	OTOMONITA ( NITA)	CMO	ONT OF OF	Ç.		
	•	;	3	;		

Belareova AV;

N

```
720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      840
                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                       GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                          9
participates in resistance to homoserine. Amplification of the gene results in an improvement of the amino acid productivity of E. coli. The invention provides: the RALB protein (see AAY7929), DNA encoding the RALB, especially nucleotides 557-1171 of the present sequence; a bacterium, especially of the genus Escherichia, in which L-homoserine resistence is enhanced by amplifying the copy number or increasing the expression rate of the rht B DNA, the DNA being carried on a multicopy vector or on a transposon; and a method for producing an amino acid by cultivating the bacterium in a culture medium to produce and accumulate the amino acid in the medium, from which it is recovered. The method is used for the production of L-homoserine, L-alanine, L-isoleucine, L-valuine, L-alanine, L-isoleucine, L-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rrarccooccoordectrarrecrosocricosaciosocricosarricarariones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGTTGGCGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      recrreceredestresekeerarrrreceereastearrecerrasea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITITITAGGGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCACAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITITITAGGGGGCCTGACACACACGCGACAGTAGCGTATTGTGGCACAAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACACCGGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                                                                                                                                                                                                                                                        AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                          CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGTCGATGATTAAGACATCAAACCCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGABABACGGBABAGCGCACCGGBATGTCBTCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAAAAGGCGTTTTCTCTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOCCAGNOTITINGCTGCTGAAACATOGGGTAATCTGCCTCTTAAAACCACGTAAAATOGT
                                                                                                                                                                                                                                                                                                                                                                            GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             regregardardacarcaaaccecaaarggaacaggrearaggecagreceaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITACGIAGCICICAAIACGCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCTGIGCG
                                                                                                                                                                                                                                                                                                           1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                            ő
                                                                                                                                                                                                                                          Query Match
100.0%; Score 1200; DB 3; Length 1200;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1200; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                Sequence 1200 BP; 285 A; 309 C; 305 G; 301 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90 00 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 B 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
        8888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

1020 1140 1141 GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAATAATGTGGGGATGCGGCGTAAAC 1200 1021 Gerceararrarrerearearestraceccaecerrecreaecearrecreares 1080 The present sequence is the L-homoserine resistance gene, rhtB, from Escherichia coli. This sequence may be used to impart L-homoserine resistance on E. coli bacteria, which would be useful for producing a high yield of L-homoserine. L-homoserine resistance means that the bacteria will be able to grow on a minimal medium containing L-homoserine to GIGGGCAGGCGCGCTTACTIGATITGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGC 840 Novel Escherichia bacterium having enhanced L-threonine resistance due enhanced RhtC protein activity, used to produce L-threonine, L-homoserine, L-valine and L-leucine. 1141 GGGAGCGCTGTTAGCATCGCCGAGGCATGCGTGAAAATAATGTCGGATGCGGCGTAAAC 961 CATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGGTCGGCGTCACCACTATTGT 961 CATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGGGTCACCACTATTGT TAAAGGACCAAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT 1081 İAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT 841 AATHGACCTTAAATGGCTGCTCTACTCAATGGCGTCGACATTTGTTCCAGGGGCGCAGT TITIGIGAAICICACCAAICCCAAAAGIAITIGIGITITCIGGCGCGCTAITICCGCAAIT 1021 GGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGAT ine resistance; L-homoserine synthesis; rhtB; L-threonine; L-leucine; ds. Tokhmakova Belareva AV, coli L-homoserine resistance gene, rhtB. Livshits VA, Zakataeva NP, Aleshin VV, Location/Qualifiers
557. .1174
/\*tag= a
/product= "RhtB" Claim 4; Page 12-13; 24pp; English. 99EP-00125406. AAA48442 standard, DNA, 1231 98RU-00123511 (first entry) (AJIN ) AJINOMOTO KK. WPI; 2000-414602/36. P-PSDB; AAY99597. Escherichia coli. 23-DEC-1998; L-homoserine 20-DEC-1999; EP1013765-A1 08-SEP-2000 28-JUN-2000 L-valine; 1081 781 901 841 9 요 8 & 셤 ò g 정임 ઠે à ð

us-09-847-392-1.rng

```
at a concentration at which the corresponding wild-type strain would grow. Since the transformed bacteria can grow on the minimal medium can synthesise L-homoserine, which accumulates. The accumulated amin acids can then be removed from the culture medium. The bacterium of present invention may also be used to synthesise L-threonine, L-vail and L-leucine at increased levels
                                                                                                                                                                                            Gar
                                                                                                                                                                                                                                                                                                                         GGACCGGGCTGAACCTCCTGCTGCTGCTGCCGCCGGATCATCAACATAATCATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCG
                                                                                                                                                                                                                             1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCCAGTATATAGCGTTTACGCC
                                                                                                                                                                                                                                                 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTA
                                                                                                                                                                                                                                                                                                                                                                    CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                   ceartaacarecceaeareceearceecraacaeceaceecaacereccee
                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCCAGTTCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACAGTAAACTCTGCTTCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACGCCAGAAATCAGTCAGGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCCAGTCTTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCCAGTCTTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTTTTTAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCCACAAAAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tritititagegrecergacacaacecreceacagragegratecerataaara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Acacceegagircarcargacciragaargeregirreccraccrecreatericarr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTTTGACCACCTCGCTCAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTATCCGGCCGGTGGCGTCTATTGCTGGCTTCAGACCGGACTGGCGATTCATATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGTTGGCGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     reginescenessernessacscrarrincescreassariscerini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGGGCAGGCGCGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGT
                                                                                                                                                     Query Match
100.0%; Score 1200; DB 3; Length 1231;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1200; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                        Sequence 1231 BP; 291 A; 319 C; 311 G; 310 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                            н
                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
   888888888888
                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \overset{\circ}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

										•						
901 TITIGIGAAICTCACCAAAAGTATIGIGTITCTGGGGGGCGTATITCGGCAATT 960 901 TITIGIGAAICTCACCAAICCCAAAAGTAITGIGTTTCTGGCGGCGCTATITCCGCAAIT 960 961 CAICAIGCCGCAACAGCGGCAACTGAIGCAGTATACTGGCGCGCTATITCCGCAATT 960 961 CAICAIGCCGCAACAGCGGCAACTGAIGCAGTATACTGGGCGCTCACCACTATIGT 1020 961 CAICAIGCGCAACAGCGCAACTGAIGCAGTATACTGGGCGCGCACCACTATIGT 1020 1021 GGTCGAIAITATIGIGAACAGATACGCCACCCTTGCTCGGCGTCACCACTATIGT 1020		1141 GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAATAATGTCGGATGCGGTAAAA 1200 	LT 3 3395 AAS93395 standard; cDNA; 622 BP.	AASS355; 13-FEB-2002 (first entry)	ing novel human diagnostic protein #29199. romosome mapping; gene mapping; gene therapy; forensic;	ement; mearcal imaging; alagnostic; geneticens.	WO200175067-A2.	01.	30-MAR-2001; 2001WO-US008631. 31-MAR-2000; 2000US-00540217. 23-AUG-2000; 2000US-00649167.	(HYSE-) HYSEQ INC.	<pre>f, Liu C, Tang YT; 639362/73. 9029208.</pre>	New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity.	Claim 1; SEQ ID NO 29199; 103pp; English.	The invention relates to isolated polynucleotide (I) and polypeptide (II) consequences. (I) is useful as hybridisation probes, polymerase chain creation (PCR) primers, oligomers, and for chromosome and gene mapping, cond in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed consequence.	activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food enrolled management (II) and its binding partners are useful in medical imaging	Supplement. (1) and (1). (1) and (1) are useful for treating disorders of sites expressing (1). (1) and (1) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations
8 8 8 8 8	8 6 8	S G	RESU AAS9 ID XX	2 X E X	K X B	8 X X	X & X	<b>€</b> £ ₹	PF XX PR	X & X	I X K K	XETET	XX SS	\$88888 <b>8</b>	38888	38888
11d not m, it ino if the line		LAC 80 LAAG 120 LAAG 120		ATAT 240      ATAT 240	race 300		ACGC 360		CGT 480       CGT 480	AGAC 540	AGAC 540 CAT 600	rcar 600 Acg 660      Acg 660	3TGC 720	3TGC 720 FGAA 780 FGAA 780	3TGC 840       3TGC 840	CAGT 900

WO200175067-A2

```
1152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1092
                                                                                                                                                                                                                                 ω
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                    733
                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                          673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention. Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at electronic format directly from WIPO at the printed products.
                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                        AGCCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCGCGGCGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTTCCGCAATTCATCATGCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 GGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGATGCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421 ACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTTATGCTGGGGAGCGCTGTT
                                                                                                                                                                                                                                                                 557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAA-CGCTGTCGCC
                                                                                                                                                                                                                                                                                                     1 Argaccrragaariggregrirgccraccrecrearcarcarrraagccccgrrccc
                                                                                                                                                                                                                                                                                                                                                                                                                    GGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTT-GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GITGGGGACGCIATITICCCGCTCAGTGATIGCGTTTGAAGTGTTGAAGTGGGCCAGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arcecrescercratearcecarcacarricarcascececacarrirangaarer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rerearearescrizacecacecrizecrearesarrecreraresarraaassaceaa
                                                                                                                                                                                                                                                                                                                                          AGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCAGGTTAT---CCGGCCGGT
                                                                                                                                                                                                                                 Gape
                                                                                                                                                                                                                                 4
                                                                                                                                                                                         Length 622;
                                                                                                                                                   Sequence 622 BP; 123 A; 152 C; 172 G; 175 T; 0 U; 0 Other;
                                                                                                                                                                                                                             Indels
                                                                                                                                                                                     47.6%; Score 571.2; DB 5;
llarity 98.1%; Pred. No. 8.7e-179;
Conservative 0; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCATCGGCGAGGCATGCGTGA 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Accarceceaaccarecerda
                                                                                                                                                                                                         Best Local Similarity
Matches 610; Conserv
                                                                                                                                                                                                                                                                                                                                          616
                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                  674
                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                         Query Match
   88888888888
                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                  ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ें
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
```

novel human diagnostic protein #25219 standard; cDNA; 2216 encoding 13-FEB-2002 AAS89415 AAS89415 RESULT 4 AAS89415/ DNA 

(first entry)

Human, chromosome mapping; gene mapping; gene therapy, forensic, food supplement; medical imaging; diagnostic; genetic disorder; ss.

Homo sapiens

The invention relates to isolated polymucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (Por) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polymucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) as useful in gene therapy techniques to restore normal activity of (II) and to to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful for treating disorders of sites expressing (II). (I) and (II) are useful for treating disorders of sites expressing (II). (I) and (II) are useful for treating disorders of polypeptide and polymucleotide sequences have applications in diagnostic forgenetic disorders or other traits to assess biodiversity responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and and canno acid sequences. AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention. Note: The sequence data for this partner did not appear in the printed specification, but was obtained in electronic format directly from WIPO at the printed specification, but was obtained in the wind the printed specification, but was obtained in the printed specification. New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess Sequence 2216 BP; 518 A; 562 C; 639 G; 497 T; 0 U; 0 Other; Claim 1; SEQ ID NO 25219; 103pp; English. Tang YT; 31-MAR-2000; 2000US-00540217, 23-AUG-2000; 2000US-00649167, 30-MAR-2001; 2001WO-US008631 WPI; 2001-639362/73 P-PSDB; ABG25228. ບ້ (HYSE-) HYSEQ INC biodiversity. RT, 11-OCT-2001 Drmanac 

Query Match
43.6%; Score 523.6; DB 5; Length 2216;
Best Local Similarity 91.3%; Pred. No. 1.3e-162;
Matches 623; Conservative 0; Mismatches 49; Indels 10;

9

10;

1879 1819 1939 2116 gcacaaaanagacac-cccgcagnrcancang-ccrnagaaaggggrigcccacccgc 2059 :058 GACATTGATCTTTTTTTAGCCCGTTCCCCAGTTTCTGGCCCAATCACCACTATGCCCCCC 1999 646 823 704 527 GCACAAAATAGACACACGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTG 586 763 1998 redericaaecaederiaarededededededererarideraddederreadaecdaaerd 1878 GCGTTTGAAGTGTTGAAGTGGGCAGGCGCGCGCTTACTTGATTTGGCTGGGAATCCAGCAG 587 CTGACATCGATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACC 647 TCGCTCAACCACGCTTAT -- CCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTG 705 GCGATTCATATTGTGCTGGTTGGCGTT-GGGACGCTATTTCCCGCTCAGTGATT 1938 eccarricaratricrecrecricecerecerecereceaeceratrirccecerecererr 764 GCGTTTGAAGTGTTGAAGTGGGCGCGCGCGCTTACTTGATTTGGCTGGGAATCCAGCAG

8 8 8

g

à

8 & 8

8 . g à

824 TGGCGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACAT

us-09-847-392-1.rng

```
cc encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated pulypeptide or its fragment whose expression is inhibited by the attisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene. In an operon required for proliferation or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies or agene on which the test compound that inhibits proliferation of an organism acts; (10) manufacturing an antibiotic; (10) profiling a procedure is overexpressed or underexpressed; (10) profiling in which the gene product is overexpressed or underexpressed; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (11) a culture or collection of strains; or (13) identifying the target of a compound that inhibits the compliferation of an organism. The antisense uncleic acids required for proliferation no roganism. The antisense uncleic acids and standing alsoovery programs, or for screening homologous mucleic acids required for proliferation in cells other than S, aureus, S. typhimurium, K. preumoniae or P. aeruginosa. The present sequence is one of the target prokeding procedure specification, but was obtained in not form part of the printed specification, but was obtained in the compart of the printed from the compart of the printed specification, but was obtained in the compart of the printed specification, but was obtained in the compart of the printed specification, but was obtained in the compart of the printed specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACGCCAGAAATCAGTCAGGGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            446 AGAAATAATGTGGGGGGCGCCCATCGAATGTGCCAGTATATAGGGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 AGAAATAATGTGGAGGATCGCACCGCCCATCGAATGTGCCCAGTATATAGGGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 326 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGGGACCGGAACGTCCCTGCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                266 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCGGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITACGIAGCICICAAIACGCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            206 TITACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAAAACGGACAAAGCGCACCGGAATGTCATCCACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAAAACGGACAAAGCGCACCGGBATGTCATCCACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACGCCAGAAATCAGTCAGGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1023 BP; 219 A; 261 C; 289 G; 254 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 37.2%; Score 446; DB 7; Length 10 Best Local Similarity 100.0%; Pred. No. 5.1e-137; Matches 446; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCCAGTCTTTTGCTGCTGAACAT 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCCAGTCTTTTGCTGCTGAAACAT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAH84646 standard; DNA; 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH84646;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 6
AAH84646
ID AAH8
XX
AC AAH8.
           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                        1639
                                                                                                                                                                                                                                                                                             1058
                                 1759
                                                                                                                                     1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to an isolated nucleic acid comprising any one of
the 6213 antisense sequences given in the specification where expression
of the nucleic acid inhibits proliferation of a cell. Also included are:
(1) a vector comprising a promoter operably linked to the nucleic acid
-GCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTG
                                                                                                                                                                                                                                                                                                                      1638 GGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                          CTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAAGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAA
                                                                                                              1698 GGCGCCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGT
                                                                                                                                                                                                                                                                                                                                                                                           CTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTT
                                                                          TTGTTCCAGCG----CGCAGTTTTTGTGAATCTCCAAATCCCAAAAGTATTGTGTTTCT
                                                                                                                                                                                    GGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sense, ds, prokaryotic essential gene, cell proliferation,
design, gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 14; SEQ ID NO 20578; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1458 TAATGTCGGATGCGGCGTAAAC 1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAATGTCGGATGCGGCGTAAAC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Prokaryotic essential gene #14365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-MAR-2001; 2001US-00815242.
06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-0342923P.
08-FEB-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2708/c
ACA32708 standard; DNA; 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-JUN-2003 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ELIT-) ELITRA PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2003-029926/02.
P-PSDB; ABU28838.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Antisense;
drug design
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1119
                           1818
                                                                                                                                                                                                                                                                                       1000
                                                                                                                                                                                                                                                                                                                                                                                           1059
                                                                                                                               1758
                                                                                                                                                                                 940
                                                                                                                                                                                                                                                                                                                                                                                                                                             1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1179
                                                                          884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ÖĽ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACA32708/C

ACA33708/C

ACA337
                                                                        ò
                                                                                                                         심
                                                                                                                                                                           \dot{\delta}
                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     염
```

ö

Gaps . 0

Length 1023;

180

267

120 327

387

240

207

87

(first entry)

26-SEP-2001 

AAHB4373 to AAHB4499 represent Escherichia coli growth and proliferation related DNA sequences (I). AAHB4500 to AAHB4570 encode the E coli growth and proliferation related proteins given in AAG99079 and AAG9830 to and proliferation related proteins given in AAG99079 and AAG98830 to not make the generation of new and for identification of compounds which interact with the gene products of (I). In addition the expression of (I) and the purification of the proteins, the purified proteins can be used to generate reagents and screen small molecule libraries or chier candidate compound libraries for compounds that can be further developed to yield novel antimicrobial compounds. In addition, nucleic acid probes complementary to (I) that are specific for particular species of microorganisms can be used to identify particular microorganisms species in clinical specimens, therefore, providing a rapid and dependable method by which to identify the causative agents of a bacterial infection. Also, antibodies generated against proteins iranslated from mRNA transcribed from proliferation-required sequences can also be used to screen for specific microorganisms that produce such proteins in a species specific microorganism that produce such proteins in a species specific manner. AAH84501 entended sequencing primers used in the isolation of E. coli growth and proliferation related sequence, which are isolation of E. coli growth and proliferation related sequence, which are Novel nucleic acids that inhibit Escherichia coli proliferation, useful for screening for homologous genes and for designing expression vectors. E. coli growth and proliferation related coding sequence SEQ ID NO:274. Escherichia coli, growth, proliferation, microbial, antimicrobial, bacterial infection, microorganism, ds. Length 417; Sequence 417 BP; 87 A; 96 C; 116 G; 118 T; 0 U; 0 Other; Claim 9; Page 351; 522pp; English. Zyskind 09-NOV-2000; 2000WO-US030950. 99US-0164415P (ELIT-) ELITRA PHARM INC. Ohlsen K, WPI; 2001-335933/35. P-PSDB; AAG98975. Escherichia coli. WO200134810-A2. 09-NOV-1999; Forsyth RA, 17-MAY-2001 Novel

ö GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT 1057 817 877 120 937 CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC 240 180 997 1 GIGATIGCGITIGAAGIGTIGAAGIGGCCAGGCGCGCTIACTIGATITIGGCTGGAAIC 60 CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC CGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCCAAAAGTATTGTGTTT GTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGCTTACTTGATTTTGGCTGGGAATC CAGCAGTGGCGCCCCCCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT 121 CGACATTIGITICCAGCGCGCAGITITIGIGAATCICACCAATCCCAAAAGIATIGIGITI 0; Gaps 0; Indels Query Match
34.8%; Score 417; DB 4; Le
Best Local Similarity 100.0%; Pred. No. 1.3e-127;
Matches 417; Conservative 0; Mismatches 0; 758 818 878 181 998 938 61 ò d ò d 8 d ઠ 셤

The invention relates to an isolated mucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibites proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the mucleic acid encoding a polypeptide whose expression is inhibited by the antisense mucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide for its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (7) identifying a compound that influences the activity of the appen product or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation of an identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) prolifing a companiant actoring the extent product is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 11177 301 GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGAGGCGCTGAATAAGATT 360 GIGCTCGGCGTCACCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT 300 TICGGCTCGTTGTTTATGCTGGTGGGAGCGCTTAGCATCGGCGAGGCATGCGTGA 1174 ricescricerranderesassassas 417 Zyskind JW; Xu HH; New antisense nucleic acids, useful for identifying proteins or scre for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs. Antisense, ds. prokaryotic essential gene, cell proliferation, drug design, gene. Ohlsen KL, Forsyth RA, Haselbeck R, Yamamoto R, Claim 14; SEQ ID NO 6496; 1766pp; English. Prokaryotic essential gene #283. Malone C, Carr GJ, 21-MAR-2001; 2001US-00815242. 06-SEP-2001; 2001US-00948993. 25-OCT-2001; 2001US-0342923P. 08-FEB-2002; 2002US-00072851. 21-MAR-2002; 2002WO-US009107. 06-MAR-2002; 2002US-0362699P ACA18626 standard; DNA; 417 Malone (first entry) (ELIT-) ELITRA PHARM INC. Zamudio C, Trawick JD, WPI; 2003-029926/02. P-PSDB; ABU14756. Escherichia coli. WO200277183-A2. 19-JUN-2003 03-OCT-2002 1058 1118 361 ACA18626; Wang L, ACA18626 ò ď g & g

(ELIT-) ELITRA PHARM INC.

```
proliferation of an organism. The antisense nucleic acids are useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than 8. aureus, 8. typhimurium, 8. pneumoniae or P. aeruginosa. The present sequence is one of the target prokaryotic essential genes. Note: The sequence is one of the target not form part of the printed specification, but was obtained in electronic format directly from WIPO at the wipo.int/pub/published_pot_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIGCTCGGCGTCACCACTATIGIGGTCGATATIATIGIGAIGATCGGTTACGCCACCCTT 1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GUGCTCGGCGTCACCACTATTGTGGGTCGATATTATTGTGATGATCGTTACGCCACCCTT 300
                                                                                                                                                                                                                                                                                                                                                            GIGATIGCGITIGAAGIGITGAAGIGGGCAGGCGCGGCTIACTIGATITIGGCTGGGAAIC 817
                                                                                                                                                                                                                                                                                                                                                                                                                                     818 CAGCAGTGGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT 877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTT 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccacarrrcraccacccccacrrrrareaarcrcaccaarcccaaagrarrerer 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGCGCCCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 360
                                                                                                                                                                                                                                                                                                                                                                                                GIGATIGCGITICAAGIGITGAAGIGCCCAGGCGCGCCTIACTICATITGCCTGGGAATC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ITCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGA 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCGGCTCGTTGTTTATGCTGGGAGGCGCTGTTAGCATCGCGAGGCATGCGTGA 417
                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                       .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Antisense; ds; prokaryotic essential gene; cell proliferation;
                                                                                                                                                                                                                                                                                  Length 417;
                                                                                                                                                                                                                                                                              Query Match 34.8%; Score 417; DB 7; Length 41 Best Local Similarity 100.0%; Pred. No. 1.3e-127; Matches 417; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                           Sequence 417 BP; 87 A; 96 C; 116 G; 118 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Prokaryotic essential gene #33385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; 2001US-00815242.
; 2001US-00948993.
; 2001US-0342923P.
; 2002US-00072851.
; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACA51728 standard; DNA; 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         drug design; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Salmomella typhi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-SEP-2001;
25-OCT-2001;
08-FEB-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-MAR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACA51728;
                                                                                                                                                                                                                                                                                                                                                            758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACA51728
            dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           쉽
                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
```

```
The 6113 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the mucleic acid encoding a polypeptide whose expression is inhibited by the antisense mucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense mucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or the activity of a gene in an operon required for proliferation, (7) identifying a cellular proliferation or the proliferation or the biological pathway in which a proliferation, required for the proliferation or the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profilling a compound, a activity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the collineration of an organism. The antisense nucleic acids required for callular proliferation or soreening for homologous mucleic acids required for callular proliferation to solate candidate molecules for actional
                                                                                                                                                                                                                                                                                                                New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumonniae or P. aeruqinosa. The present sequence is one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at the wip. Authority from WIPO at the print of the print
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 gerreraredecedederecadadededederadaracaraceracidaredededededed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 gcinarcinarciegciegenarceadeanegeeeeeeeeeeeeeeeerareearcarceer 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGACCTTTGAATGGTGGTTGCTATCTACTGACCTCAACTCTGTTGAGTCTTTCTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 617 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCCGGCCG--GTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 gerrcagececercanaceareaceaceacercaneaeceaece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              675 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              735 TTGGG-ACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 creseracecretrireececrearescriricaaaareaaareecee
                                                                                             Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           invention relates to an isolated nucleic acid comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 621 BP; 121 A; 170 C; 171 G; 159 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 31.9%; Score 382.2; DB 7; Length Best Local Similarity 78.1%; Pred. No. 6.3e-116; Matches 485; Conservative 0; Mismatches 133; Indels
                                                                                                     ¥¥
                                                                                                     Ohlsen |
Forsyth |
                                                                                                 Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 14; SEQ ID NO 39598; 1766pp; English.
                                                                                                     Malone C,
Carr GJ,
                                                                                                     Zamudio C,
Trawick JD,
                                                                                                                                                                                                           2003-029926/02
                                                                                                                                                                                                                                                  P-PSDB; ABU47858
                                                                                                     'nή
                                                                                                     Wang
%XGCCCCCCCCCCCCCCCCCCCCCCCX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
```

œ

```
1033
                                                                                                                                                                                                                                                                1093
                                                                                                                                                                                                                                                                                                                                                                       CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                         420
                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                         600
  301 ACTCTCGCCCAGACGCAATCGCGGGTCGGCTGTTCAAACGGGCGATATTTGTCAATCTA 360
                                                                                                                                                                                                                                                                                                                                                                                                      ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAA
                                                                                                                                                                                                                                                                GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                  Grigarcacciontraciones de consecuenciones de consecuenciamentes de 
                                                                                            ACCAATCCCAAAAGIATIGICTITCITGCCGCCCIGTITCCGCAAITCATCATGCCGCCGC
                                                                                                                                                                                                                 421 chaccecháchegedechenhechtenhenentenechtenhenhennent
                                                                                                                                                            CAGCCGCAACTGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            essential gene; cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCATCGGCGAGGCATGCGTGA 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #17760.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gegregenagacacecerea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001US-00948993.
2001US-0342923P.
2002US-00072851.
2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA; 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Prokaryotic essential gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Antisense; ds; prokaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Klebsiella pneumoniae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2003-029926/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACA36103 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        drug design; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; ABU32233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-MAR-2001;
06-SEP-2001;
25-OCT-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08-FEB-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                          1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1154
                                                          914
                                                                                                            361
                                                                                                                                                            974
                                                                                                                                                                                                                                                                   1034
                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACA36103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wang L,
Wall D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACA36103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
d
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
ద
                                                          ò
                                                                                                                                                         ò
                                                                                                                                                                                                                                                             ò
```

The invention relates to an isolated nucleic acid comprising any one of the 6213 antiesnse sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the

Claim 14; SEQ ID NO 23973; 1766pp; English

antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation; (7) identifying a compound that influences the activity of required for proliferation, or that inhibits reliular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies or agene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene product is overaxpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the compliferation of an organism. The antisense mucleic acids required for proliferation no isolate candidate molecules for rational dangiasovery programs, or for screening homologous mucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, cequired for proliferation in cells other than S. aureus, S. typhimurium, conform part of the printed specification, but was obtained in celectronic format directly from WIPO at the wipo.int/pub/published\_pot\_sequences 1033 GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG 1093 CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTTTA 1153 7 180 480 540 733 793 eccraccidarcidecineegrarccaecaaredeceeceecaecaeceaceaceaccidaar 300 913 360 973 900 674 120 crosscacrerererecescresiserssecresserres de 140 en casa de la constanta de 150 en constanta de 150 en constanta 853 9 GITGGGACGCTATITICCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGAGCAGGCGCG ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCCGCAATTCATCATGCCGCAA derricedeadedarrakraceardaceacerecarraaceacedearacedededede GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCG-TGGG TOGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 301 Acecneeceaageceaacececacacececaaacrerriccaececececerriceraarcre CAGCCGCAACTGATGCAGTATATCGTGGTCGGCGTCACCACTATTGTGGTCGATATTATT greatgatrogerateceaecereececeaececarirrececaresareaaeseceaae cagaridaadeccuridaacaaaarcrirrigaricacricrirrahdecrigiridecedecedecric Areaccarreacrecrecerrecerrecrecerecrecerecarraitere GGCTCTGGTGCAATCACACTATGACCACCTCGCTCAACCACGGTTA--TCCGGCCGGTG GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCTGGTGCAATTGACCTTAAA 557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTAACGCTGTCGCCA Gaps 3, Length 618; Sequence 618 BP; 108 A; 182 C; 179 G; 149 T; 0 U; 0 Other; Indels Query Match
31.2%; Score 375; DB 7; Le
Best Local Similarity 77.6%; Pred. No. 1.6e-113;
Matches 479; Conservative 0; Mismatches 135; GCATCGGCGAGGCATGC 1170 734 ( 241 914 361 974 1034 541 1154 617 794 854 421 481 1094 61 675 Н 181 g à g d a g ద ð 셤 8 ద 8 ઠે 셤 ઠે ద ઠે ò à

u,

Gaps

3,

616

733

793

853

674

```
21-MAR-2002; 2002WO-US009107
                ACA32157 standard; DNA; 618
                                                                                                      (ELIT-) ELITRA PHARM INC.
                                                      Enterobacter cloacae
                                                                                                            Zamudio C,
Trawick JD,
                                                                                                                      WPI; 2003-029926/02.
P-PSDB; ABU28287.
                                                            WO200277183-A2.
                                                                                           08-FEB-2002;
06-MAR-2002;
                                                                                     06-SEP-2001;
                                                                                 21-MAR-2001;
                              19-JUN-2003
                                                                    33-OCT-2002
                       ACA32157;
                                                                                                            ηÜ
                                                                                                             Wang
Wall
          RESULT 10
             ACA32157
                                  엄
```

```
1094 CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         974 CAGCCGCAACTGATGCAGTATATCGTGCTCGCGTCACCACTATTGTGGGTCGATATTATT 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .034 GIGAIGAICGGIIACGCCACCCIIGCICAACGGAIIGCICTAIGGAIIAAAGGACCAAAG 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301 ACGCIGGCICTGACGCAAAACGCGGCCAICTGIIIAAGCGIGCGGTAIICGICAACCIG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361 Accaacceaaadacarcererrecreecececececececececarrare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 GCATCGATTGCCGGTTTGCAGACCGGGCTGGGTATTCATATTGTGCTGGTCGGGATCGGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 cradedacccrerrerecedereceredecrireacerecereaaardedecededeaa 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 eceratoridatrirescressearceaseasesesesesesesesesesesereareaser 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          854 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       914 ACCAATCCCAAAAGTATTGTGTTTCTGGCGGCGTATTTCCGCAATTCATCATGCCGCAA 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541 cagargaaggcccrgaaraaagrcrrrggcrcgcrgrrirargcrggrrggcgcgcgcrfr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481 greargarracerraceceacecreececaceaarrececerecarraaacecraaa
                                                                                                                                                                                                                                                                                                                                                             557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                            1 Argaccircea Argarderrescria ceracida caracara recencida e certa 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               617 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTA--TCCGGCCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     675 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGT-GGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               734 GITGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGAAGTGGGCAGGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCCCTGGTGCAATTGACCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Antisense; ds; prokaryotic essential gene; cell proliferation;
                                                                                                                                                                                                Length 618;
                                                                                                                                                                                                                                                                                   Indels
                                                                                                                 Sequence 618 BP; 106 A; 176 C; 183 G; 153 T; 0 U;
                                                                                                                                                                                            Score 357.4; DB 7;
Pred. No. 1.1e-107;
0; Mismatches 146;
electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Prokaryotic essential gene #30466.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1154 GCATCGGCGAGGCATGC 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             617
                                                                                                                                                                                                Query Match
Best Local Similarity 75.9%;
Matches 468; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACA48809 standard; DNA; 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGTCAGCGCGTCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Salmonella paratyphi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  drug design; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACA48809;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACA48809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZZZZEZEZEZZZZZEZ
        ន្តដ្តីនូ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to an isolated mucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibite proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) an bost cell containing the vector; (3) an isolated polypeptide for its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or that as an activity against a biological pathway proliferation, or that inhibits cellular proliferation; (7) identifying a compound that influences the activity of identifying a gene required for cellular proliferation or the biological pathway in which a proliferation required for cellular proliferation or the test compound that inhibits spendic and an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene product is overexpressed or underspressed (12) determining the extent or organism acts; (9) manufacturing an antibiotic; (10) profiling or compound's activity; (11) a culture comprising strains in which the gene product is overexpressed or underspressed of a compound that inhibits the proliferation of an organism. The antisense nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhmurium, required for proliferation in cells other than S. aureus, S. typhmurium, required for proliferation in cells other than sequence is one of the target one of the present sequence is one of the target one of the printed specification, but was obtained in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              screening
to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New antisense nucleic acids, useful for identifying proteins or s
for homologous nucleic acids required for cellular proliferation
isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Antisense; ds; prokaryotic essential gene; cell proliferation;
drug design; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Haselbeck R, Ohlsen KL,
Yamamoto R, Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 14; SEQ ID NO 20027; 1766pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Prokaryotic essential gene #13814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Malone C,
Carr GJ,
                                                                                                                                                                                                         BP
    601 GCCTCCGCCCGCCATGC 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001US-00815242.
2001US-00948993.
2001US-0342923P.
2002US-00072851.
2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                      (first entry)
```

1033

477

973 417

297

1091

537

```
AGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGT 1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                       298 actricecceaeacecaariceceeericececrericaaaceeecarariteraatera 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GIGATGATGGTTACGCCACCCTTGCTCAACGG--ATTGCTCTATGGATTAAAGGACCAA
CIGGGIACGCICITITICGCGCTCGCTCCTCGCTTTTGAAATTCTGAAATGGGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             914 ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Accaptoccadadenarierorieroriecececerentececantecatearececae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               grantarcacina de caracida de contra contra contra contra de contra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AccadandaAccccrdaAraAaccrrrccrrccrrcrrraraccrcccccccc
                                                                                                                                     GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA
                                                                                                                                                                                                                  derrarchraterdderddddararddda---ddaddddarardarar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACCGCAACTGGCGCAGTACCTCATTCTCGGCGTCACCACGATTGTGGTGATATGATT
                                                                                                                                                                                                                                                                                                                 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Antisense; ds; prokaryotic essential gene; cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 14; SEQ ID NO 7563; 1766pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCATCGGCGAGGCATGCGTGAAA 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Prokaryotic essential gene #1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
ACA19693/c
ID ACA19693 standard; DNA; 1017 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-MAR-2001, 2001US-00815242.
06-SEP-2001, 2001US-00948993.
25-OCT-2001, 2001US-0342923P.
08-FEB-2002, 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Salmonella typhimurium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2003-029926/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        drug design; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; ABU15823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACA19693;
                                                         181
                                                                                                                                               794
                                                                                                                                                                                                                                                                                                                           854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wang L,
Wall D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to an isolated mucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibites proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid of a permoter operably linked to the nucleic acid of a permoter operably linked to the nucleic acid of a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide or the fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or that inhibits cellular proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (6) pathway in which a proliferation. required gene or tits gene product lies or a gene on which the test compound that inhibits proliferation of an organism acis; (9) manufacturing an antibiotic; (10) profiling a compound; a activity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense mucleic acids are useful for cellular proliferation in cells other than S. aureus, S. typhimurium, K. pneumonlae or P. aeruginnosa. The present sequence is one of the target of proliferation in cells other than S. aureus, S. typhimurium or term part of the printed specification, but was obtained in the printed for the printed specification, but was obtained in the printed specificati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            557 ATGACCTTAGAATGGTGGTTTGCCTACCTGACATCGATCATTTTAACGCTGTCGCCA 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         675 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 Argaccirirgaargereerirgeccrarcracreaccreaecresegererrerees 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 Gerricagececentraracenteaceacererareaceaceace
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ectrictratescessacrecasacessacressarracaratestrates de secressas se estas esta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         735 TTGGG-ACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             617 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCCGGCCG--GTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zyskind .
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New antisense nucleic acids, useful for identifying proteins or s
for homologous nucleic acids required for celular proliferation
isolate candidate molecules for rational drug discovery programa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29.0%; Score 348.2; DB 7; Length 623; 76.6%; Pred. No. 1.3e-104; Live 0; Mismatches 138; Indels 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 623 BP; 124 A; 171 C; 168 G; 160 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 14; SEQ ID NO 36679; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Malone C,
Carr GJ,
                                                                                                                                     06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-0342923P.
08-FEB-2002; 2002US-03072851.
06-MAR-2002; 2002US-0362699P.
              21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 76.6
Matches 479; Conservative
                                                                                                                                                                                                                                                                                                                                                                 (ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2003-029926/02.
P-PSDB; ABU44939.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang
Wall
```

임 ò a ð Q ACA51727 standard; DNA; 1017 BP

The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibites proliferation of a call. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated containing the vector; (3) an isolated or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide or the fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or that inhibits cellular proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway in which a proliferation, or that inhibits cellular proliferation of an organism acts of sectivity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the strains in changes mucleic acids are useful for strains; or (13) identifying the strains in maintenance or solutions. The articular proliferation to isolate candidate molecules for rational days dascovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. autounds or P. aeruginosa. The present sequence data for this patent did not form part of the printed specification, but was obtained in cell or proliferation in cells one of the sequences of the wipo int/pub/published\_pot\_egences. 

Sequence 1017 BP; 208 A; 251 C; 305 G; 253 T; 0 U; 0 Other;

446 AGGAACAGGGTGGCTATCGCGCCCCCCATTGAGTGCGCCAGGATATAACGCTTACGCCAC 387 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120 386 GGCCCCGGCTCAATTTCCTGCTGCCAGAACGCCGCTAAGTCCTCAACATAATCGTTAAAA 327 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 240 TGGTCGATGATGAAGATATCAAAACCGAGATGAAAAAGGTCATACGCCAGTTCAGCGTAT 207 TITACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG 300 CGAAAACGGACAAAGCGCACCGGAATGTCATCCACCACCAGTAAACTCTGCTTCATCACGC 360 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT 420 09 326 TGATCGACATGACCCCGATGCGGGTCCGATAACATCGGCCCGGAGCGCCCTTGACCACGG 267 206 ritracaraacricricaarigcggccaggacaaargacgarcgricgaricgringgaarcarrr 147 CGAAAACGGACAAAGCGCACCGGAATGTTACCCACGCCGATAAACTCCGGCTCTTCCCGG 87 27 1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTTACGCCAC 121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGGAACGTCCCTGCCCGCGA TGACGCCAGAAATCGGTCAGCGCCCCATAGCAAAAGCGGCAAAAGCATTTTCTCTTTGTT Gaps ö 24.9%; Score 298.8; DB 7; Length 1017; 79.4%; Pred. No. 4.6e-88; tive 0; Mismatches 92; Indels 0; Query Match Best Local Similarity 79.4 Matches 354; Conservative 61 181 266 241 146 361 98 301 g ઠે g 셤 8 엄 ò ઠે 셤 ઠે g ò d ò

The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibites proliferation of a cell. Also included are:

(I) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide for its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding antisense nucleic acid; (4) an antibody capable of specifically binding compound that inhibiting cellular proliferation, (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway. It is a proliferation, or that inhibits cellular proliferation of the gene product or that has an activity against a biological pathway. It which the test compound that inhibits cellular proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a path which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound; a activity; (11) a culture comprising strains in which he capt or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains, or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids are useful additional and scallular proliferation of partners or product and organism. The antisense mucleic acids required for the procession of an organism. The antisense mucleic acids required and a program or for graneaning homologous mucleic acids required and a procession of an antisense and dead are useful and a procession of an antisense and dead are an engine and an organism. drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at fig. wipo.int/pub/published\_pot\_sequences 40 Zyskind Xu HH; New antisense nucleic acids, useful for identifying proteins or s for homologous nucleic acids required for cellular proliferation isolate candidate molecules for rational drug discovery programs. Antisense; ds; prokaryotic essential gene; cell proliferation; Ohlsen KL, Forsyth RA, Haselbeck R, Yamamoto R, Claim 14; SEQ ID NO 39597; 1766pp; English, Prokaryotic essential gene #33384 Carr GJ, Malone C, 06-SEP-2001; 2001US-00948993. 25-OCT-2001; 2001US-0342923P. 08-FEB-2002; 2002US-00072851. 21-MAR-2002; 2002WO-US009107 21-MAR-2001; 2001US-00815242 06-MAR-2002; 2002US-0362699P 19-JUN-2003 (first entry) (ELIT-) ELITRA PHARM INC Zamudio C, Trawick JD, WPI; 2003-029926/02. P-PSDB; ABU47857. design; gene Salmomella typhi. WO200277183-A2 03-OCT-2002 'nή drug Wang Wall 

ďW.

RESULT 13 ACAS1727/c

TCCCAGTCTTTTGCTGCTGAACAT 446 receasicarirrecrecreasacar 1

421 58 T; 0 U; 0 Other;

1017 BP; 208 A; 249 C; 305 G; 255

```
Claim 1; SEQ ID NO 23825; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-MAR-2001; 2001US-00815242.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Enterobacter cloacae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      drug design; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACA32154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACA32154/C
ID ACA33
AC ACA35
AC ACA35
AXX
XX AC ACA35
XX ACA55
XX ACA35
XX 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
      ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                               ô
                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                 387
                                                                                                                                                                                                                                                                                                      267
                                                                                                                                                                                                                                                                                                                                                                                       207
                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTACGTAGGTCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                386 GACCCCGGCTCAATTTCCTGCTGCCAGAAGGCCGCTAAGTCCTCAACATAATCGTTAAAA 327
                                                                                                                                                                                                                                                           121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         206 TTTÄCATAACTCTCAATGCGGCCAGGACAAATGACGATCGTCCGATCGTTGGAGTCATTC 147
                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27
                                                                                                                                 446 AGGAACAGGGTGGCTATCGCGCCCCCCATTGAGTGCGCCAGGATATAACGCTTACGCCAC
                                                                                                                                                                                                                                                                                                    TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT
                                                                                                                                                                            GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             caaaaacaaaaaacaaccaaccaaaararrarccacacaaraaacrccaccrcrrccdc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86 TGACGCCAAAAATCGGTCAGCGGCCCCATAGCAAAAGCGGCAAAAACGCATTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                     266 regregargargararcaaacceagargaaaaagercaraceceagrreagegrar
                                                                                      1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human, chromosome mapping; gene mapping; gene therapy, forensic, food supplement; medical imaging; diagnostic; genetic disorder; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                               ö
      Length 1017;
                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     novel human diagnostic protein #23825.
                                               93;
      DB 7;
    Score 297.2; DB 7
Pred. No. 1.6e-87;
); Mismatches 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCCAGTCTTTTTGCTGCTGAACAT 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26 recedereartriderectedadear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뛆
                                           · (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAS88021 standard; cDNA; 2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31-MAR-2000; 2000US-00540217.
23-AUG-2000; 2000US-00649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tang YT;
    24.8%;
79.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-MAR-2001; 2001WO-US008631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
Query Match
Best Local Similarity 79.1:
Matches 353; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-639362/73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; ABG23834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAS88021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                            δ
                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                               à
```

```
The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (III). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed sequence tags for identifying expressed centivity of is useful in gene therapy techniques to restore normal extivity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynuclectide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for generate or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention. Note: The sequence data for this partner the printed specification, but was obtained in electronic format directly from WIPO at the equences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 AGAAATAATGTGGAGGATCGCCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              400 ggaccederreaaccrecrecrecrecagaarecedecagareareareaacaraarearea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   340 cgarraacargcccgagargcggarcgcraacagcgacgacggaacgrcccrgcccgcga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGABATABATGTGGBGCACCGCCCATCGBATGTGCCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                280 recreeardarracacarcaaaccccaaaredaacacacaraadeccacarrac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ritaceradectercada a decece e de caracada e de caracado e 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 2054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antisense; ds; prokaryotic essential gene; cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2054 BP; 477 A; 527 C; 563 G; 487 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 291.4; DB Pred. No. 2e-85; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Prokaryotic essential gene #13811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-MAR-2002; 2002WO-US009107.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154/c
ACA32154 standard; DNA; 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 99.7
Matches 292; Conservative
```

```
New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                             Claim 14; SEQ ID NO 20024; 1766pp; English.
06-SEP-2001; 2001US-00948993.
25-0CT-2001; 2001US-0342922P
08-FEB-2002; 2002US-00072851
06-MAR-2002; 2002US-0362699P
                                     (ELIT-) ELITRA PHARM INC.
                                                   Zamudio C,
Trawick JD,
                                                                          WPI; 2003-029926/02
                                                                                 P-PSDB; ABU28284
                                                   Wang L,
Wall D,
```

the 6213 antisense sequences given in the specification where expression of the 6213 antisense sequences given in the specification where expression of the 6213 antisense sequences given in the specification where expression controlled are:

(1) a vector comprising a promoter operably linked to the nucleic acid choose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation, (7) identifying a compound that influences the activity of required for proliferation, (7) identifying a compound that influences the product lies of a gene product or that has an activity against a biological pathway required for that has an activity against a biological pathway in which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an organism acts, (9) manufacturing an antibiotic; (10) profilling a compound, a activity; (11) a culture comprising strains in which the strains is present in a culture or collection of proliferation of an organism. The antisense nucleic acids required contiferation of an organism. The antisense nucleic acids required contiferation of an organism or capable or actional contains and account or accompany or the compound that inhibits the proliferation of an organism or capable and antisense nucleic acids required for informant and accounted for retional contains and accounted for informant and accounted for retional and accounted for capable and antisense and accounted for retional and accounted to several and an organism are accounted to a compound accounted for a compound accounted for a compound accounted for a compound accounted for a formation of an organism accounted and an organism accounted accounted for a compound accounted for a formation and accounted for a compound acco drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at fig. wipo.int/pub/published\_pot\_sequences invention relates to an isolated nucleic acid comprising any Sequence 990 BP; 187 A; 266 C; 309 G; 228 T; 0 U; 0 Other;

Length 990; DB 7; 24.2%; Score 290.8;

> ò d à 셤 à a à

345	Matches 349; Conservative 0; Mismatches 97; Indels 0; Gaps	0;
н	1 AGAAATAATGTGGAGATGGCCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC 60	09
446	446 AAAAACAGCGTCGAAATGGCGCCGCCCATGGAGTGCGCAAGAATATACCGCTTGCGCCAG 387	387
61	61 GGACCGGCCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120	120
386	386 GGGCCGGGCTGAACGTCCTGCTGCTGCAAAAACGTCGTCGACGTAATCGCTGAAG 327	327
121	121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGGAACGTCCCTGCCCGCGA 180	180
326	326 CGATCGACGTGCCCACGGTGTCCGGCACATACGTCCGGACAGCCCTGTCCACGA 267	267
181	181 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 240	240
992	266 TGGTCGATGATCAGGACATCGAACATCGAAATGACCAGGCCATGGCTCATAGGCCATAGGCCATAGGCTAGCGCGGCGTAT 207	202

300	147	360	87	420	27		
TITACGIAGCICTCAAIACGCCCCGGGCAGAIGACIACCACCCGGICCIGIGGGGGGGG	TTAACGTAGCTTTCAATACGCCCGGGGCAGACCACAATCACCGGGTCATTTTTTTT	CGAAAACGAACAAAGGGCACCGGAAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC 360	CGGAAAACGAACGAACGGGGATGCCCCCGACGCCCGTAAACTCATCTTCCTCACGC	361 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAACGAACG	86 TGCCGCCAGAAATCGGTCAGCGGCCCCATAGAGAAAAGCAGCAAAAGCGTTTTCTCGTGTT	TCCCAGTCTTTTGCTGCTGAAACAT 446	TCCCAGTCCTTTTCTGCTGAAACAT 1
241	206	301	146	361	98	421	56
δλ	qc	λõ	QC	δλ	Ωp	δλ	q <sub>Q</sub>

Zyskind JW; Xu HH;

Haselbeck R, Ohlsen KL, Yamamoto R, Forsyth RA,

Malone C, Carr GJ,

Search completed: March 28, 2004, 14:37:59 Job time : 603.686 secs

```
181 IGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCCATAGGCCAGTTCCGCATAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 274, Appl
Sequence 895, App
Sequence 895, App
Sequence 6107, App
Sequence 6107, App
Sequence 6107, App
Sequence 777, App
Sequence 177, App
Sequence 177, Appl
Sequence 178, App
Sequence 178, App
Sequence 115, Appl
Sequence 2689, Ap
Sequence 2269, Ap
Sequence 2269, Ap
Sequence 2269, Ap
Sequence 2216, Ap
Sequence 2216, Ap
Sequence 2216, Ap
Sequence 2218, Ap
Sequence 2378, Ap
Sequence 2459, Ap
Sequence 258, Ap
Sequence 278, Ap
Sequence 2, Appli
Sequence 11, Appli
Sequence 12, Appli
Sequence 11, Appli
Sequence 12, Appli
Sequence 12, Appli
Sequence 12, Appli
Sequence 11, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Appli
                                                                                                                                                          March 28, 2004, 14:10:49 ; Search time 120.331 Seconds (without alignments) 5534.263 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                        US-09-847-392-1
1200
1 agaaataatgtggagatcgc.....atgtcggatgcggcgtaaac 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-396-357-1

US-09-711-164-274

US-09-711-164-274

US-09-489-039A-895

US-09-543-681A-238

US-09-252-991A-6103

US-09-252-991A-6103

US-09-252-991A-6103

US-09-252-991A-6103

US-09-252-991A-213

US-09-557-884-1

US-09-557-891A-275

US-09-528-352-991A-2378

US-09-134-001C-2269

US-09-252-991A-2378

US-09-252-991A-2378

US-09-252-991A-2378

US-09-103-840A-2

US-09-103-840A-1

US-09-103-840A-1

US-09-103-840A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     682709 seqs, 277475446 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                               IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12000 4
4117 4 4
6481 4
10263 4
10263 4
1030121 4
1030121 4
103121 4
103121 4
103121 4
103121 4
103121 4
103121 4
103121 4
103121 4
103121 4
103121 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
10312 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
                                                                                                                                                                                                                                                                        Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Result
No.
```

Sequence 1112, Ap Sequence 1112, Ap Sequence 18033, Appl Sequence 1, Appli Sequence 17, Appli Sequence 15039, A Sequence 195, App Sequence 6015, App Sequence 6175, App Sequence 6175, App Sequence 6175, App Sequence 6175, App Sequence 6175, App Sequence 6175, App Sequence 750, App Sequence 13, Appli Sequence 13, Appli Sequence 13, Appli		CONFERS ON BACTERIUM O LO-HOMOSERINE AND METHOD	Length 1200; Indels 0; Gaps 0	agtatatagcgtttaggccac 60 	CTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120 
3 US-09-096-867-1 4 US-09-023-655-1112 4 US-09-621-976-85A-40 3 US-09-103-85A-40 3 US-09-103-840A-1 4 US-09-103-840A-1 4 US-09-103-840A-1 4 US-09-103-840A-1 4 US-09-252-991A-6195 4 US-09-252-991A-6294 4 US-09-252-991A-6294 5 US-08-804-227C-13 5 US-08-804-227C-13 5 US-08-804-227C-13	ALIGNMENTS	96357  KRADIEVICH - PAVLOVNA - VENYAMIOVICH - LVONA - LOONA - LA COLI RESISTANCE T - CING L-AMINO ACIDS - S/09/396,357 - 15 - 15 - 13	0%; Score 1200; DB 4; 0%; Pred. No. 0; 0; Mismatches 0;	agaartaatgiggagaicgcaccgcccatcgaatgiggcagtatatagcgtttaggcga 	GGACCGGGCTGAACTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 
2.7 16075 2.7 16075 2.7 4401652 2.7 4401652 2.7 4411529 2.7 4411529 2.6 138 2.6 138 2.6 2136 2.6 25356 2.6 25356 2.6 44377 44377		icati 1108: 1108: HITS, MARIN, MEEOVA MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV MARKOV	100.0%; larity 100.0%; Conservative (	aataatgtggaga'             aataatgtggaga'	GGACCGGGCTGAACCTCCTG
8 9 0 0 0 1 0 2 6 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		1396-357- ence 1, nxt No. 1, LICANT: L	Query Match Best Local Simil: Matches 1200; Co	1 AGA/             AGA/	61 GGA(      61 GGA(
0 0 000 0 000 0 000 0 000 0 0 0 0 0 0 0		RESULT US-09- 1 Sequ- 1 Graves APP APP APP APP APP APP APP APP APP APP	Oue: Best	\$ <b>6</b>	\ \ \ \ \

ô

877 120 937 180

9

```
GIGCICGGCGICACCACIALIGIGGICGAIAITAITGIGAIGAIGGITACGCCACCCIT 1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCGGCTCGTTGTTTATGCTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGA 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATGATGATGATGATCGCTTACGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ceacarrrerrecaecececaerrrrrereaarcreaecearcecaaaerrererr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            818 CAGCAGTGGCGCCCCCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                           758 GTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGGCTTACTTGATTTGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCAGTGGCGCCCCCTCGCTGCATTGACCTTAAATCGCTGGCCTCTACTCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGACATITIGITCCAGCGCGCAGTITITGTGAATCTCACCAAAACTATTGTGTTTT
                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                        Length 417;
                                                                                                                                                                                                                                                                                                                                                                              0; Indels
                                                                                                                                                                                                                                                                                                                                     Query Match 34.8%; Score 417; DB 4; Le
Best Local Similarity 100.0%; Pred. No. 2.9e-128;
Matches 417; Conservative 0; Mismatches 0;
FILE REFERENCE: ELITRA.008A
CURRENT APPLICATION WINBER: US 09/711,164
FUNENT FILING DATE: 2000-11-09
FRIOR APPLICATION NUMBER: US 60/164415
FRIOR FILING DATE: 1999-11-9
NUMBER OF SEQ ID NOS: 469
SEQ ID NO 274
LENGTH: 417
TYPE: DNA
ORGANISM: Escherichia coli
                                                                                                                                                                                                                                                                           ... (417)
                                                                                                                                                                                                                              FEATURE:

NAME/KEY: CDS

LOCATION: (1)

US-09-711-164-274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ч
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081 TAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAAATAATGTCGGATGCGGCGTAAAAC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1141 GGGAGCGCTGTTAGCATCGGCGAGGATGCGTGAAAAAATAATGTCGGATGCGGTAAAC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITIGIGAATCICACCAATCCCAAAAGTATIGIGITTICIGGCGGCGCCTATITCCGCAATT 960
                                                                                                         360
                                                                                                                                                  420
                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                       900
                                                                                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Greedeagececegerracrrearrregereseaarceageagreececececegerec 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGT 900
                                                                                                                                                                                        361 IGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT 420
                                                                                                                                                                                                                                                                           rcccastcriringcrecreaaacarcessraarcreccrerraaacacsreraaarcer 480
                                                                                                                                                                                                                                                                                                                      TITITITAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGGCACAAAATAGAC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TIATCCGGCCGGTGGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGC 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961 carcarececaacaececaacrearecaerararecaerarececereececereaerarrer
TTRAGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTTGGCGTGGGGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTGACCTTAAATCGCTGCTCTTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTTGTGAATCTCACCAATCCCAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081 TAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                       АСАССОСОВАЕТТСАТСАТСАТСАТОВАТОСТЕСТТЕСТВОСТВОТЕЗАТСАТ
                                                                                                                                                                                                                                                                                                                                                                                                                                               541 ACACCGGGAGTTCATCATGACCTTAGAATGGTGGTTTTGCCTACCTGCTGACATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    restrescencescerrescacectarrincescercagnearisectricaacterreaa
                                                              CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                            301 CGAAAACGGACAAAGCGCACCGGAATGTCATCCACCACCAGCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                   TCCCAGTCTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                       TITITITAGGGGGCCTGACACGCTGCGACAGTAGCGTATTGTGGCCACAAAATAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGGGCAGGCGCGCCTTACTTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCCCCTGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021
                                                              301
                                                                                                                                                  361
                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
```

. d

g

à 셤 ò g ò g ò Ġ ò

à

g à d

셤 à

ò

300

Sequence 895. Application US/09489039A

Sequence 805. Application US/09489039A

Patent No. 661083

Patent No. 661083

Patent No. 661083

APPLICANT GATY Breton et. al

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA

TITLE OF INVENTION: NUMBER: US/09/489,039A

TITLE OF EXPERIENCE: 2709.2004001

CURRENT APPLICATION NUMBER: US/09/489,039A

CURRENT PILING DATE: 1999-01-27

PRIOR PILING DATE: 1999-01-29

PRIOR FILING DATE: 1999-01-29

NUMBER OF SEQ ID NOS: 14342

SEQ ID NO 895

LEMBOTH: 645 5 Gaps Length 645; Indels Score 391.8; DB 4; Pred. No. 8.9e-120; 0; Mismatches 142; TYPE: DNA ORGANISM: Klebsiella pneumoniae Query Match 32.6%; Best Local Similarity 77.5%; Matches 500; Conservative US-09-489-039A-895

g

ò

à

ò ద g ò

```
Sequence 107, Application US/09711164
; Sequence 107, Application US/09711164
; Patent No. 6569738
; GENERAL INFORMATION:
; APPLICANT: Persyth, R. Allyn
; APPLICANT: Corst, Rari
; APPLICANT: Cyskind, Judith
; TITLE OF INVENTION: GENER ESSENTIAL FOR MICROBIAL PROLIFERATION AND ANTISENSE THERE
; TITLE OF INVENTION: GENER ESSENTIAL FOR MICROBIAL PROLIFERATION AND ANTISENSE THERE
; FILE REPERENCE: ELITRA.008
; CURRENT RILING DATE: 2000-11-09
; PRIOR PELICATION NUMBER: US 60/164415
; PRIOR FILING DATE: 1999-11-9
; NUMBER: OF SEQ ID NOS: 469
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 107
; LEMOTH: 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATC-@GTTACGCCACCTTGCTCAACGGATTG--CTCTATGGATTAAAGGACCAAAGCAG 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     144
                                                                        134 TGTCCAGGAACCACTGCTGCTGCCAGAGCGCGGCCAGCTCATCATCAACATAGTCGCTGAAG 375
                                                                                                                                                                                                                                                                                                                                         TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                194 caaaagcccacaaaacccracccccaracarccaccacccrrraaarrcaccrrriccccc 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          204
61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                                                   374 rrhaccaceréreces es es estados de ses estados es estados es estados es estados es estados es estados en entreferencia entrefer
                                                                                                                                                                                                                                                                                                                                                                                                                          314 regrenarientencarenchaneceerangaananentennegeerettengentat 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 143 AACTGATGCAGTATATCGTGCTCGGGCGTCACCACTATTGTGGTCGATATTATTGTGATG 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            203 ccaaaagrarrererrerereeceecerarriceecaarrearereceecaacaecee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            74 TCCCAGTCCTTTTTCTGCCCCAAACATCGGGTTTACACCCCTGTTAACCGCTGAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACTGATGCAGTATATCGTGCTC-GGCGTCACCACTATTGTGGTCGATATTATTGTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134 TGTCGCCAGAAATCCGTCAGCGGCCCCATGCTAAAGGCCGCAAACGCGTTTTTCTCGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCCAGTCTTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   263 ecectricianteses en caracteristicas escensiones and contrates and co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             861 CCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                921 CCAAAAGTATTGTGTTTTTTGGGGGGGGGTATTTCCGCAATTCATGTGCCGCAACAGCCGC
                                                                                                                                                                           121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 263;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 207.4; DB 4;
Pred. No. 8.8e-59;
0; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 94.3%;
Matches 248; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ) ORGANISM: Escherichia coli
US-09-711-164-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481 TTTTT 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14
                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                ö
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 851, Application US/09489039A

Sequence 851, Application US/09489039A

Patent No. 661036

GENERAL INFORMATION:

GENERAL TITLE OF INVENTION:

TITLE OF INVENTION:

FIRE OF INVENTION:

FOR INVENTION:

FOR INVENTION:

CURRENT APPLICATION NUMBER:

CURRENT FILING DATE:

PRIOR APPLICATION NUMBER: US/09/489,039A

CURRENT FILING DATE:

PRIOR APPLICATION NUMBER: US 60/117,747

PRIOR FILING DATE:

NUMBER OF SEQ ID NOS: 14342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTC 1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTG 1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAGTGTTGAAGTGGGCAGGCGCGCGTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGC 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    949
                                                                                                                                                                           TCGATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTC 652
                                                                                                                                                                                                                                                                                                                                                                                                                          121 AACCACGGATACCGCGCGCGCGCGCGTCGATTGCCGGTTTGCAGACTGGGCTGGCCATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           degecadededen centrale de la seconda de l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTTCTGGCGGCGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCGCGCGCGTTTCGTAAATCTCACCAATCCCAAAAGATTGTTTTTTCTGGCCGCCCTG
         533 AAATAGACACCCGGGAGTTCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACA
                                                                   AAACAGACAATCAGGGAGTTTCTCATGACCATTGAGTGGTGGTTGCCTACCTGCTGCTGCTGACA
                                                                                                                                                                                                                                                            61 TCAATTATTCTCAGCCTGTCGCCGGGTTCCGGAGCGATTAATACCATGACCACTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1010 ACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481 ACCACCATCGTCGTCGATATCATTGTGATTGGCTATGGCTATGCGACCCTGGCGCAGCGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 rececardearcaaadeeceaaaceardaadeecerreaacaaagrerriderreacie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACCACGGTTA--TCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATATTGTGCTGGTTGGCG-TGGGGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cararcerecirectrecerrecorrecentrecererecerecerrecorrectre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITCGCAGTITATCCTGCCGCACCAGCCGCAGGTGATGCAATATATCGTTCTGGGCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGA 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rrrandcricárcegededrecredecredededrecreda 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
24.8%; Score 297.2; DB 4;
Best Local Similarity 75.7%; Pred. No. 3.1e-88;
Matches 368; Conservative 0; Mismatches 118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-489-039A-851/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OKGANISH: ALEX
US-09-489-039A-851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1130 '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       494
                                                                                                                                                                       593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                              653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                 임
                                                                                                                                                                       à
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
         ਨੇ
```

```
RESULT 8

US-09-252-991A-6103/c

Sequence 6103, Application US/09252991A

Sequence 6103, Application US/09252991A

Sequence 6103, Application US/09252991A

Patent No. 6551795

GENERAL INFORMATION:

APPLICANT:

APPLICANTION:

TITLE OF INVENTION:

ARIGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REPRESENCE: 10796-136

CURRENT APPLICATION NUMBER: US 60/074,788

PRICR APPLICATION NUMBER: US 60/074,788

PRICR APPLICATION NUMBER: US 60/074,788

PRICR PEDELICATION NUMBER: US 60/074,788

PRICR FILING DATE: 1998-07-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   986 ATGCAGTATATCGTGGTGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGT 1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1106 CTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGG 1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        819
                                                                                                                                                                                                                                                                                                                                                                                                                                        631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  520 creegecearcerreacceregiecrecierricerecreercaececeaecaecaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        760 gradacceraccircecaeccieniceices aceses de consecuencia de 
                                                                                                                                                                                                                                                                                                                                                                                                                                            TEGITITECCTACCTECTGACATCATTTTTAACGCTGTCGCCAGGCTCTGGTGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         280 eccricalierciredescriscaerricaecririedescaadecracieda Acedentese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             340 crecagarcescriescerscasarcecarrerescecesceresceres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             recegercagicatingegringaagigingaagiggecagececegeriaeting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aceacciceacaracerrireaccrearcaacicarreaccicareacciaciano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGGAATCCAGCAGTGGC--GCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cheacearaceccharaceacacacacacacacacarrahacancoaracecancacar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  926 AGTATIGIGITITCIGGCGCGCTATITCCGCAAITCAIGCCGCAACAGCCGCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1046 TACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       700 TACACCGGGCTGGCTGCGGCGTGCTACGGGTTGGGTTCGCCGCCCCAGCAGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     riedrinedechretricerecereceaecareaecerieredeceedeeceedeaecerie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCAATCGCGTCGACATT-TGTTCCAGCGCGCAGTTTTTGTGAATCTCCACCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  s80 gegenganchicanderededgigengededagindandaacdddaacddaddddachd
                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                        Score 112.4; DB 4;
Pred. No. 6.3e-27;
0; Mismatches 276;
          60/094,190
PRIOR APPLICATION NUMBER: US 60/094
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 6447
LENGTH: 834
TYPE: DNA
TYPE: DNA
CRGANISM: Pseudomonas aeruginosa
US-09-252-991A-6447
                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 53.5%;
Matches 324; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1166 CATGCG 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAGCG 825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     867
                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: GARY BRETON
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABIL
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
FILE REPERRINCE: 2709.1.002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION WUMBER: US 60/128,706
PRIOR APPLICATION WUMBER: US 60/128,706
NUMBER OF SEQ ID NOS: 8344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 6447, Application US/09252991A
Patent No. 6551795
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: ARRUGINOSA POR DIAGNOSTICS AND THERAPEUTICS
FILE REPERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1999-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     472 AAATAĞCGCCGCCGTCGAATGGCCTAACGCAAAATAGTGCTGATAGTGATAAGGCAAAA 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         74 CCTCCTGCTGCCAGAATGCCGCCAGATCATCAATCATTAAAGCGATTAACATGCC 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCGCGAAAACGGACAA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  232 CACTACGGCCAGAGCAGATCACCAACGCTTTTTGTGTGAGGAGGGGCCAATGAACAT 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  314 AGCGCACCGGAATGTCATCCACACTAGTAAACTCTGCTTCATCACGCTGACGCCAGAAAT 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134 CGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGGGATGGTCGATGATTA 193
          83 ATCGGGTTACGCCACCCTTGCTCAACGGGATGGCTCTAAGGGATTAAAGGCCCAAACCAA 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      412 GGATAGTATCAATAAATGTCGATAAATCATCGACATAATCACTGAATTTTTTCTACGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          292 AAATATCATAACCAAGGTGATAAAAATCGAAGGCCACTTCAGGGTATTTTACATAACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCGAATGCTCACGCCATCGACTCCGGTAAATTCGCCTTCCTGTCGTTGGTTCCAAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14 AGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCACGGACCGGGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352 crititidodarcarciaaraaccecerdaraarceirdececedarcarcaadaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194 AGACATCAAACCCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATATTTTACGTAGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      374 CAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTTTCCCA 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ccaaraagaraccaricgraaaaccagaarrecrirircacgagaraacca 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4; Length 1038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 144.8; DB 4;
Pred. No. 1.2e-37;
0; Mismatches 167;
                                                                       1097 ATGAAGGCGCTGAATAAGATTTT 1119
                                                                                                                                                                                                                                           RESULT 6
US-09-543-681A-238/c
US-09-543-681A-238/c
Sequence 238, Application US/09543681A
Patent No. 6605709
GENERAL INFORMATION:
                                                                                                                                       23 Argandecercantandaritr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12.1%;
ilarity 59.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Proteus mirabilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
Matches 245; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-252-991A-6447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-543-681A-238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 238
LENGTH: 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                          ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

ö

```
Sequence 2622, Application US/09489039A
Sequence 2622, Application US/09489039A
Patent NO. 6610836
GENERAL INFORMATION:
APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.2004001
CURRENT APPLICATION NUMBER: US/09/489,039A
CURRENT FILING DATE: 2000-01-27
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 14342
SEQ ID NO SE2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           965 ATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTC 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     789
                                                                                                                                                                                                                                                                                                                                                                                                                                                     211 GCGGGTGTAGGTGTTCTATTCGCAACGACACCATTAGCCTTTTCAGGCGGTTAAGTGGTTT 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           391 Grcadratcagradoccradadeccarcerarirrarrescagirirecorcagirara 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               606
                                       TCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGACCACCACGGTTATCCGGCC 670
                                                                                                                       91 TCTCCAGGAGCAGGAGGAATTGCTTCTATGTCGAGCGGCTTAAATTATGGCTTTTAGACAT 150
                                                                                                                                                                                                                                                                                      151 GGCTACTGGAATGCAATTGGTTTGCAAATCGCCTTGTTAATTCAAATCATGATTGTAGCG 210
                                                                                                                                                                                                                                                                                                                                                                     729 GTGGG-GTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGGCA 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         271 GGGGTAGCTTÁTTTÁTTTGTATTTAGCCTATTTGCÁGTGGACAGCACCTGTAAAAGATÁTA 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        331 GAAATTCAACACGAAAAAGGATAAATCTGTTTCTGCTCTGCTGTTCAATGGATTTGTA 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caccoaccoedicoaarcagarricoacgaeraacreerricorocoeducoroededaa 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       905 GIGAATCICACCAATCCCAAAAGIATIGIGITITCIGGCGGCGCTATITCCGCAATICATC 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         788 GGCGCGGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCCGCTGGTGCA---ATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          451 GATTTAAGCAAACCTCAATGGATACAATATCTGATTATGGCAGCCACTATGGTTACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1025 GATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              511 GATTIGATIGIAATGGCTGGTTATACAGGGCTAGCTTCAAAAGTTTAAGATTGCTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               264 AGCAGGATACCTTTGCTGGCTGGGCATCCAGTTGCTCCTGCGACCACGCCAGCAATTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             845 GACCITAAATCGCTGGCCTCTACTCAATCGCGTCGACATTIGTTCCAGCGCGCAGTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                204 recrrraderececracidecegriricidaciraciraraccriaridaaareeree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                790 CGCGGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCCGCTGGTGCAATTGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 730 TGGGGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   350 TAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1085 GGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTA 1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             571 retéchásádagaadaharatthahacegregritirgeagreaháríth 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4; Length 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 59; DB 4; Length 645
Pred. No. 2.9e-09;
0; Mismatches 230; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 46.1%;
Matches 197; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SULT 10
-09-489-039A-2622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-489-039A-2622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       324
                                                611
                                                                                                                                                                                                      671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGIH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                     음
                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:

APPLICANT: Gary L. Breton et al.

APPLICANT: Gary L. Breton et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER

TITLE OF INVENTION: BAUMANII FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: GTC99-03PA

CURRENT APPLICATION NUMBER: US/09/328,352

CURRENT FILING DATE: 1999-06-04

NUMBER OF SEQ ID NOS: 8252

SEQ ID NO 777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         986 AIGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGT 1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       925
                                                                                                                                                                                                                                                                                                                                                                                                                                                              631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCTCGATGTCCTGCGGGTTGCAGTACGGCTTTGCGCGAGGCTACTGGAACGCGCTGGGC 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCGCGGGCGCGGCTTACTTGATTTGG 808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               324 GCGACCTCGGCACTGGCTTTCAGCCTGATCAGTGGTTCGGCGTGGCCTACCTGGTGTAC 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             crasasca accerca acracia de referencia de referencia de calecca de caracidade de consecuencia 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          926 AGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTG 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cridecegracieccial de de cade de contrade 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                504 TGGTTCGCCTTCTTCCTCGCCTGCTGGGCCATCAGCCTGTCGCCGGGCGCGCCGGAGCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCG-TGGGGTTGGGACGCTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGGAATCCAGCAGTGGC--GCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCAATCG-CGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GOGGIGATOTICATGOTOGOGGIGOTGOCOGOAGTICATOGACCOGOACCAGCOGOTGOTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            551 ITCATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              572 TGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rrcecrarercrrrecaaerrreerraecrrarararerreecrerreegrearragrarr
                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                               Length 930;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.4%; Score 76.6; DB 4; Length 663; 49.1%; Pred. No. 4.2e-15; tive 0; Mismatches 294; Indel8
                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                          Query Match
8.5%; Score 102.4; DB 4;
Best Local Similarity 55.6%; Pred. No. 1.4e-23;
Matches 278; Conservative 0; Mismatches 216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 777, Application US/09328352
Patent No. 6562958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Acinetobacter baumannii
US-09-328-352-777
                                                                                                                                                                   ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACACCGGGCTGGCTGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
NUMBER OF SEQ ID N
SEQ ID NO 6103
LENGTH: 930
TYPE: DNA
                                                                                                                                                                                                           US-09-252-991A-6103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -09-328-352-777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Simi
Matches 289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENGTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
```

```
ઠ
                                                                                                                                                                    g
                                                                                                                                                                                                                                                                        g
                                                                                                 970 GCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATAT 1029
                                                                                                                                                                                                     1030 TATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACC 1089
                                               384 TGTGCTTAACCCCAAAATGGGCGTCTTCTACGTTTCGTTTTTACCTCAGTTTATCCCCGC 443
                                                                                                                                                                                                                                                                                                                                                            564 AGCCGTAGTGAAATGGATGGATCGACGACCGCTGCTGCTTTTCTTTTTTTCCTTGCTGCGAA 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lequence 1, Application US/09557884
Satent No. 6506581
GENERAL INPORMATION:
APPLICANT: Fleischmann et al.
TITLE OF INVENTION: The Nucleotide sequence of
TITLE OF INVENTION: The Hemophilus influence Rd Genome, Fragments
Thereof, and Uses Thereof
TCTCACCAATCCCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCC
                                                                                                                                                                                                                                                        504 GCTGTGGTCGTTAACGCTGATTACCGCCACTCGCTATGCCGCAGGCATCCTGAAAAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 3.8%; Score 46; DB 4; Length 1830121; Best Local Similarity 52.5%; Pred. No. 0.0077; Matches 128; Conservative 0; Mismatches 110; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSE: Human Genome Sciences, Inc. STREET: 9410 Key West Avenue
CITY: Rockville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: 3 1/2 inch diskette
COMPUTER: Dell Pentium
OPERATING SYSTEM: MS DOS v6.22
SOFTWARE: ASCII Text
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/557,884
FILING DATE: 25-Apr-2000
CLASSIFICATION: <UNROwn>
PRIOR APPLICATION: <UNROwn>
PRIOR PREDICATION: <UNROwn>
PRIOR PAPLICATION: <UNROwn>
PRIOR PAPLICATION: <UNROwn>
APPLICATION NUMBER: 04/76,102
FILING DATE: JUN-5-1995
ATTORNEY AGENT INFORMATION:
NAME: MACHELLS: A marke
REGISTRATION NUMBER: 41,971
REFERENCE/DOCKET NUMBER: PB186P3
TELEDRANG: 301-309-8639
TELEBPAX: 301-309-8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE DESCRIPTION: SEQ ID NO: 1:
US-09-557-884-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 20850
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MATION FOR SEQ ID NO:
SEQUENCE CHARACTERIST
                                                                                                                                                                                                                                                                                                                                                                                                                 1150 GTTAGCA 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   624 GCTGGCA 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION
                                                                                                                                                                                                                                                                                                             1090
                                    g
                                                                                                 ò
                                                                                                                                              d
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                             ਨੇ
                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

1 AGAAATAATGTGGAGGTCGCCCCCATCGAATGTGCCGGTATAAGCGTTTACGCCAC

9

```
689213 CTGAAAAGTGCGGTTACTTTTCGATGATTTTCGCCATATCATCGACATAGAAACGAAT 689272
                                                                                                                                                                                          689273 TCATCTAAATGCCCTTTTTGAGGA----ATAATACGCTGTGAATAGCCTTGACCGCGA 689326
                                                                                                                                                                                                                                                                                        689327 igaricaaaraggaaracarcgraaccrrgargaraaaraararcaraaggggcrcrgaccar 689386
                                                                                                                                                                                                                                            181 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 240
                                                 61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fluenzae Rd Genome, Fragments
                                                                                                                                              121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 46; DB 4; Length 1830121;
Pred. No. 0.0077;
0; Mismatches 110; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Human Genome Sciences, Inc.
STREET: 9410 Key West Avenue
CITY: Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/643,990A
FILING DATE: 23-Aug-2000
CLASSIFLATION: «Unknown»
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/487,429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIF: 20850
COMPUTER REALABLE FORM:
MEDIUM TYPE: 3 1/2 inch diskette
COMPUTER: Dell Pentium
OPERATING SYSTEM: MS DOS V6.22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE DESCRIPTION: SEQ ID NO: 1:
US-09-643-990A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/426,787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Robert D. Fleischmann
Mark D. Adams
Owen White
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: 40,302
REFERENCE/DOCKET NUMBER: PB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/09643990A; Patent No. 6528289; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hamilton O. Smith
J. Craig Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 1995-04-21
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 52.5
Matches 128; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                          689387 TTCA 689390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: MD COUNTRY: U
                                                                                                                                                                                                                                                                                                                                              TTTA 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-643-990A-1
                                                                                                                                                                                                                                                                                                                                              241
```

셤

셤 à g

à d 8

ò

```
1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1037 ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1014 CTATTGTGGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTC 1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77 cccrarrecrererranalacaceaeerrererrerrarrarrarrererrarrarea 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             137 CTATCGTTATCGTTATCGTTGTTATCATCCTTTCCATCACCGTTCCCAAACACAGGGTCT 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52 AATCCAAAGGCAATACTTATCGCCCTTTCTTCCGCAATTCGTTAGCCCACAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                    917 AATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           977 CCGCAACTGATGCAGTATATCGTGGTGGCGTCACCACTATTGTGGTCGATATTATTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             112 ccescrastroccastricraaracrissrrorrarrorrorrarrorceastriarisca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   954 CGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 35.4; DB 4; Length 1028;
Pred. No. 0.26;
0; Mismatches 61; Indels 0
                                                                                                                                                                                                                                                                                                                   Length 312;
                                                                                                                                                                                                                                                                                                                 Score 36; DB 4; Length 312
Pred. No. 0.081;
0; Mismatches 105; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Hallahan, David L.
TITLE OF INVENDATION:
FILE REFERENCE: BC1019 US NA
CURRENT APPLICATION NUMBER: US/09/655,908
CURRENT PILING DATE: 2000-09-06
PRIOR PILING DATE: 1999-09-11
NUMBER OF SEQ ID NOS: 37
SOFTWARE: Microsoft Office 97
LENGTH: 1028
FILE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
SEQ ID NO 3779
LENGTH: 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1097 ATGAAGGCGCTGAATAAGATTTTC 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAAAGIGITCAATCGIATGIGC 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search completed: March 28, 2004, 18:24:27 Job time : 139.331 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 17, Application US/09655908
Patent No. 6645747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 2.9%;
Best Local Similarity 54.1%;
Matches 72; Conservative
                                                                                                                                                                                                                                                                                                                 3.0%;
illarity 48.5%;
Conservative
                                                                                                                                                                                                                                   ; ORGANISM: Proteus mirabilis US-09-543-681A-3779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1074 TATGGATTAAAGG 1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   197 TATCGTCTCGAAG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Glycine max
-09-655-908-17
                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 99; Conserv
                                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: GARY BRETON
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABIL
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Gary L. Breton et al.

APPLICANT: Gary L. Breton et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUMANNI FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
SEQ ID NOS: 8252
SEQ ID NO 2682
                                                                                                                                                                                                                                                                                  TCATCTABATGCCCTTTTTGAGGA----ATAATACGCTGTGAATAGCCTTGACCGCGA 689326
                                                                     689213 CTGAAAAGTGCGGTTACTTTTCGATGATTTTCGCCATATCATCGACATAGAAACGAAAT 689272
                                                                                                                                                                                                                                                                                                                                                                                   689327 ricaricaanracaanacaricgraaccrigardanaaaricaraagcgagcricrgaccar 689386
                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1000 GCTCGGCGTCACCACTATTGTGTGATATTGTGATGATCGGTTACGCCACCCTTGC 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1060 TCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTT 1119
                                                                                                                                                                                                                                                                                                                                    TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        528 CTCAATATICAAAGAGAAGAIGCTTGCCGGAAATAATTITTCTAAGCTCAATAAAGTCAG 587
                      1 AGABATAATGIGGAGAICGCACCGCCCAICGAATGIGCCAGIATATAGCGTTTACGCCAC 60
                                                                                                                                                                                                                             121 CGATTAACAIGCCCGAGAIGCGGAICGGCTAACAGGCGACCGGAACGICCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           940 GGCGCCCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    468 ITTAICITTAACATICIGCTIGATCGGATTTTTAATTCATTTAGTTTATGCCAACTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     880 ACATTIGITICCAGCGCGCAGITITIGIGAAICTCCACAAICCCAAAAGIAITGIGITITCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       348 AAAGCTTTTCTATCAAGGGTTGTTTGCCTCACTACTTAATCCAAAAACAATTGTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             408 TATTGCCCTTTTTCCACAGTTTATTGATATAAAAAGAATATTAAATCAGTTTTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.1%; Score 37.2; DB 4; Length 633; 46.2%; Pred. No. 0.05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches 143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1120 CGGCTCGTTGTTTATGCTGGGGAG 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           588 rédereraritritritritaecae 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3779, Application US/09543681A
Patent No. 6605709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2682, Application US/09328352 Patent No. 6562958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ) ORGANISM: Acinetobacter baumannii
US-09-328-352-2682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 46.2
Matches 123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          689387 ŤŤCÁ 689390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-543-681A-3779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -09-328-352-2682
                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                               689273
                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
```

à g à g ઠે g ò 셤 à

```
1 AGAAATAATGIGGAGATCGCACCGCCCATCGAATGIGCCAGTATAIGCGITTACGCCAC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 274, App
Sequence 39598, A
Sequence 23973, A
Sequence 20027, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2,0578, A Sequence 47314, A Sequence 6496, Ap Sequence 6496, App
                                                                                                                                                                       (without alignments)
8764.284 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Appli
Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 36679,
Sequence 7563, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                             l agaaataatgtggagatcgc.....atgtcggatgcggcgtaaac 1200
                                                                                                                                             March 28, 2004, 16:45:05 ; Search time 509.752 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Published Applications NA:*

1: \cgn2_6/ptodata/1/pubpna/PCT NEW PUB. Seq:*

2: \cgn2_6/ptodata/1/pubpna/PCT NEW PUB. Seq:*

4: \cgn2_6/ptodata/1/pubpna/PCT NEW PUB. Seq:*

4: \cgn2_6/ptodata/1/pubpna/USO6_NEW PUB. Seq:*

5: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

6: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

7: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

7: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

8: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

10: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB. Seq:*

11: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB. Seq:*

11: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB. Seq:*

12: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB. Seq:*

13: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB. Seq:*

14: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB. Seq:*

15: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB. Seq:*

16: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB. Seq:*

17: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

18: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

18: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

18: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*

18: \cgn2_6/ptodata/1/pubpna/USO8_NEW PUB. Seq:*
GenCore version 5.1.6
(c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US 10-282 122A-20578
US-10-369-423-47314
US-10-287-274-274
US-10-287-122A-39598
US-10-282-122A-20027
US-10-282-122A-20027
US-10-282-122A-3679
US-10-282-122A-3679
US-10-282-122A-3679
US-10-282-122A-3679
US-10-282-122A-39597
US-10-282-122A-39597
US-10-282-122A-39597
US-10-282-122A-3738
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                     2458946 seqs, 1861504846 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                            IDENTITY NUC Gapopt 10.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match Length DB
                                                                                                                                                                                                                                        US-09-847-392-1
1200
                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
```

```
Sequence 1, Application US/09927395

Patent No. US20020058314A1

GENERAL INFORMATION:

APPLICANT: LIVSHYTS, VITALY ARKADIEVICH

APPLICANT: ALCAMAROVA, NATALYA PAVLOVNA

APPLICANT: ALCAMAROVA, ALL VALENTINOVNA

APPLICANT: ALCAMAROVA, IRINA LVOVNA

TITLE OF INVENTION: DNA CODING FOR PROTEIN WHICH CONFERS CN BACTERIUM

TITLE OF INVENTION: DRA CODING FOR PROTEIN WHICH CONFERS CN BACTERIUM

TITLE OF INVENTION: DRA CODING FOR PROTEIN WHICH CONFERS CN BACTERIUM

TITLE OF INVENTION: DRA CODING FOR PROJECT TO LO-HOMOSERINE AND METHOD

TITLE OF INVENTION: DRABER: US/09/927,395

TITLE OF INVENTION NUMBER: US/09/927,395

CURRENT FILING DATE: 1999-10-15

PRIOR FILING DATE: 1999-10-15

PRIOR FILING DATE: 1999-10-13

NUMBER OF SEQ ID NOS: 2

SEQ ID NO 1

LENGTH: 1200

LENGTH: 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 9; Length 1200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
100.0%; Score 1200;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1200; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 1200
TYPE: DNA
ORGANISM: Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; NAME/KEY: CDS
; LOCATION: (557)...(1171)
US-09-927-395-1
```

Qy         1141         GGGAGCGCTGTTAGCATCGGCGAGGCATGAGAAAATAATGTCGGATGCGGCGTAAAC         1200           Db         1141         GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAATAATGTCGGATGCGGCGTAAAC         1200	RESULT 2 US-09-847-392-1 Sequence 1, Application US/09847392 Sequence 1, Application US/09847392 Sequence 1, Application US/09847392 Sequence 1, Application US/09847392 APPLICANT: LUSHITS, VITALIA PARADIEVICH APPLICANT: ALCOSHIN, VLADIMIR VENYAMIOVICH APPLICANT: ALCOSHIN, VLADIMIR VENYAMIOVICH APPLICANT: ALCOSHIN, VLADIMIR VENYAMIOVICH APPLICANT: ALCOSHIN, VLADIMIR VENYAMIOVICH APPLICANT: ACCOSHIN, VLADIMIR VENYAMIOVICH APPLICANT: TOKHMAKOVA, IRINA LVOWNA TITLE OF INVENTION: BSCHERICHA COLI RESISTANCE TO LO-HOMOSERINE AND METHOD TITLE OF INVENTION: ESCHERICHA COLI RESISTANCE TO LO-HOMOSERINE AND FILE REFERENCE: 010-1039-0 CURRENT PILLING DATE: 2010-105-03 PRIOR FILLING DATE: 1999-10-13 PRIOR FILLING DATE: 1999-10-13 NUMBER OF SEQ ID NOS: 2 SCFTWARE: PATCHIL Ver. 2.1 SEQ ID NO TYPE: DAA ORGANISM: Escherichia coli FRANCKE: CDS LOCATION: (557)(1171)	US-09-847-392-1 Query Match Query Match Best Local Similarity 100.0%; Pred. No. 0; Matches 1200; Conservative 0; Mismatches 0; Indels 0; Gaps 0.	QY 1 AGAATAATGTGGAGATCGCACCGCCCATGGAATGTGCCAGTATATAGGCTTTACGCCAC 60	OY 121 CGATTAACATGCCGAGATCGCCTAACAGGCACCGGAACGTCCCTGCCCCGCGA 180	241 TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG	201 CGAAAACGGAAAAACGCAACGGAATGCATCCAACCGGTAAAACTCTGCTTTATCACGC 3500  361 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCACGGTTTTCTCTTGTT 420  bb 361 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAAGCAGCGTTTTCTCTTGTT 420  cy 421 TCCCAGTCTTTTGCTGCTGAAACATCGGCTAATCTGCCTCTTAAAACCACGTAAAATCGT 480  bb 421 TCCCAGTCTTTTTGCTGCTGAAACATCGGCTAATCTGCTTTAAACCACGTAAAATCGT 480
61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120	121   CGATTAACATGCCCGAGATGGCGTAACAGGCGACCGGAACGTCCCTGCCCGCGA 180   121   CGATTAACATGCCCGAGATGGGGATCGCCGGAACGTCCCTGCCCGCGA 180   121   CGATTAACATGCCCGGATGCGGATGCGGATGCCGCGCGAACGTCCCTGCCCGCCC	541 ACACCGGGGTTCATCATGACTTTAGAATGGTGGTTTGCCTACCTGTGATTGAT	661 TTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCGGACTGGCGATTCATATTGTGC 720	GTGGGCAGGCGCGGCTTACTTGATTGGCTGGAATCCAGCAGTGGCGCGCGGTGGTGCTGCTGGTGCTGGTGCTGGTGCTGGTGG	TITIGAATCTCACCAATCCCAAAGTATTGTGTTTCTGGGGGGGCTATTTCGGCAATTTTTTTT	961 CATCATACCGCAACGCGCAACGGATATATCGTGCTCGGCTCACCACTATTGT 1020 1021 GGTCGATATTATTGTGATGATGATGCGCTCGCCCTTGCTCAACGGCTTGCTCATGGT 1020 1021 GGTCGATATTATTGTGATGATCGGTTACGCCCCCTTGCTCAACGGATTGCTCTATGGAT 1080 1021 GGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCATGGAT 1080 1081 TAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT 1140 1081 TAAAGGACCAAAGCAGTGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT 1140 1081 TAAAGGACCAAAGCAGTGAAGAGATTATCGGCTCGTTGTTTATGCTGGT 1140

8 6 8 6 8 6 8 6 8 6 8 6 8 6

m

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D
D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCATGCCGCAACAGCGGCAACTGATGCAGTATATCGTGGTCGGCGTCACCACTATTGT 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       961 CATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGT 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGAT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1021 GGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGAT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081 TAAAGGACCAAAGGAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGT 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGAAAAATAATGTCGGATGCGGCGTAAAC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
US-10-282-125A-20578/C
Sequence 20578, Application US/10282122A
Sublication No. US20040029129A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Wang, Liangeu
APPLICANT: Haselbeck, Robert
APPLICANT: Tawick, Cheryl
APPLICANT: Tawick, Taxi
APPLICANT: Tawick, John
APPLICANT: Trawick, John
APPLICANT: Yamanoto, Robert
APPLICANT: Korsyth, R.
APPLICANT: Ku, H.
APPLICANT: Ku, H.
APPLICANT: Korsyth, R.
APPLICANT: TIME OF INVENTION UNMERR: 60/191,078
FRICR REPRESENCE: ELITRA.034A
CURRENT PLING DATE: 2003-02-23
FRIOR FILING DATE: 2000-03-21
FRIOR FILING DATE: 2000-05-23
                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGTTGGGGGGTTGGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAA 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901 TITIGIGATCTCACCAAACCAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATT 960
                                   TTTTTTTAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCACAAAATAGAC 540
                                                                                                                                                                                                                                    TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGC 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTTGGCGTGGGGTTGGGACGCTATTTCCCCGCTCAGTGATTGCGTTTGAAGTGTTGAA 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GIGGGCAGGCGCCGCTIACTIGATITGGCTGGAATCCAGCAGTGGCGCGCGCGCTGGTGC 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATTGACCTTAAATCGCTGGCCTCTACTCCAATCGCGTCGACATTTGTTCCAGCGCGCAGT 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841 AATTGACCTTAAATCGCTGGCCTCTAATCGCGTCGACATTTGTTCCAGCGCGCAGT 900
                                                                                                                                                                                                                                                                                                                                                                                                                                  Trancescesses de la contrata del contrata del contrata de la contrata del contrata del contrata de la contrata del contrata del contrata de la contrata del contrata del contrata de la contrata del con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGGGCGCGCCGCTTACTTGGTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGC
                                                                                                                                       TRATOCGGCCGGCGTCTATTGCTGGCTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                    ACACCGGGAGTTCATCATGACCTTAGAATGGTGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                                                                                                                                                                                               TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCACCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITIGIGAATCICACCAATCCCAAAGTATTGIGITITCIGGCGGCGCTAITICCGCAAIT
661
                                                                                                541
                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141
                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ਨੇ
                                임
                                                                                            ò
                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
```

```
PRODUCTION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAACGCGTTTTCTCTTGTT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206 TITACGIAGCICICAATACGCCCCGGGCAGAIGACTACCACCCGGICAIGGIGCIGIGCG 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            446 AGAAATAATGTGGAGATCGCACCGCCCATGGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 386 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAAAATAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 CGATTAACATGCCCGAGATGCGGATCGCCTAACAGGCGACCGGAACGTCCCTGCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITACGIAGCICICAAIACGCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCCAGTATAGGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-06
PRIOR PILICATION NUMBER: 60/230,347
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2010-02-09
PRIOR FILING DATE: 2010-02-09
PRIOR FILING DATE: 2010-02-09
PRIOR FILING DATE: 2010-02-16
PRIOR FILING DATE: 2010-02-16
PRIOR FILING DATE: 2010-02-16
PRIOR FILING DATE: 2010-02-16
PRIOR FILING DATE: 2010-03-16
PRIOR FILING DATE: 2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 47314. Application US/10369493
Publication No. US20030233675A1
GENERAL INFORMATION:
APPLICANT: Co. Yongwei
APPLICANT: Slater, Gregory J.
APPLICANT: Goldman, Barry S.
APPLICANT: Globan, Barry S.
APPLICANT: Chen, Xiandeng
TITLE OF INVENTION: EXPRESSION OF MICROBIAL PROTEINS IN PLANTS FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 37.2%; Score 446; DB 12; Length 1023; Best Local Similarity 100.0%; Pred. No. 2.4e-144; Matches 446; Conservative 0; Mismatches 0; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCCAGTCTTTTTGCTGCTGAAACAT 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: DNA
; ORGANISM: Escherichia coli
US-10-282-122A-20578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 4
US-10-369-493-47314/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
```

```
APPLICANT: Forsyth, R. Allyn
APPLICANT: Ohlsen, Kari
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
TITLE OF INVENTION: GENES ESSENTIAL FOR MICROBIAL PROLIFERATION AND ANTISENSE THERET
FILE REFERENCE: ELITRA.008DV1
CURRENT APPLICATION NUMBER: 18/10/287,274
PRIOR APPLICATION NUMBER: 05/0164115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1058 GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT 1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATGGTTACGCTACCCTT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1118 TTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGA 1174
                                              PRIOR APPLICATION NUMBER: 60/207,727
PRIOR PILLING DATE: 2000-05-23
PRIOR FILLING DATE: 2000-05-26
PRIOR FILLING DATE: 60/230,335
PRIOR FILLING DATE: 2000-09-06
PRIOR PILLING DATE: 2000-09-09
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR PELLING DATE: 2000-10-23
PRIOR PELLING DATE: 2000-110-23
PRIOR PELLING DATE: 2000-110-23
PRIOR PILLING DATE: 2000-110-22
PRIOR PELLING DATE: 2000-110-22
PRIOR PELLING DATE: 2000-110-22
PRIOR PELLING DATE: 2001-02-10
PRIOR APPLICATION NUMBER: 60/267,931
PRIOR APPLICATION NUMBER: 60/267,936
PRIOR APPLICATION NUMBER: 60/267,936
PRIOR APPLICATION NUMBER: 60/267,936
PRIOR PELLING DATE: 2001-02-10
PRIOR PELLING DATE: 2001-02-10
PRIOR PELLING DATE: 2001-03-10
PRIOR PELLING PELLING DATE: 2001-03-10
PRIOR PELLING DATE: 2001-03-10
PRIOR PELLING PEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGCAGTGGCGCGCCGCTGGTGCATTGACCTTAAATCGCTGGCCTCTACTAATCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGACATTTGTTCCAGCGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGCGGCGCTATTTCCGCAATTCATGCCGCAACAGCCGCAACTGATGTATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 758 GTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGGCTTACTTGATTTGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGCGCTTACTTGATTTGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCAGTGGCGCCCCCGCTGGTGCATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ceacarrretrecaecececaerrrrrereaarcreaecaarcecaaaerrererrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 34.8%; Score 417; DB 12; L. Best Local Similarity 100.0%; Pred. No. 1.8e-134; Matches 417; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 274, Application US/10287274 Publication No. US20030181408A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ) TYPE: DNA

) ORGANISM: Escherichia coli

US-10-282-122A-6496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-287-274-274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGACCGGGCTGAACCTCCTGCTGCTGCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGATTAACATGCCCCAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITACGIAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 CGAAAACGGACAAAAGGGCACCGGAATGTCATCCACCACTAAACTCTGCTTCATCACGC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           386 GGACCGGGCTGAACCTCCTGCTGCCCAGAATGCCGCCAGATCATCATCATAATCATTAAAG 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          266 IGGICGAIGAITAAGACAICAAACCCCAAAIGGAACAGGICAIAGGCCAGIICCGCAIAI 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             206 TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCGGTCATGGTGCTGTGGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGGGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       326 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGAGGACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 TGACGCCAGAAATCAGTCCAGGGTCCCATGGTAAAAGCAGCAAAAGGGGGTTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             146 CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Identification of Essential Genes in Microorganisms FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT PILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ô
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1023;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
TITLE OF INVENTION: PLANTS WITH IMPROVED PROPERTIES FILE REFERENCE: 38-10(52052)B
CURRENT APPLICATION NUMBER: US/10/369,493
CURRENT TILING DATE: 2003-02-28
PRIOR FILING DATE: 2002-02-1
NUMBER OF SEQ ID NOS: 47374
SEQ ID NO 47314
LENGTH: 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 37.2%; Score 446; DB 15; I
Best Local Similarity 100.0%; Pred. No. 2.4e-144;
Matches 446; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 TCCCAGTCTTTTTGCTGCTGAAACAT 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 6496, Application US/10282122A
Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26 receasterringersersaacar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wall, Daniel
Trawick, John
Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                         ; TYPE: DNA; ORGANISM: Escherichia coli
US-10-369-493-47314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
US-10-282-122A-6496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
```

```
1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PUDLICATION NO. USZO40029129A1

PUDLICATION NO. USZO40029129A1

APPLICANT: Wang, Liangeu

APPLICANT: Malone, Carlos

APPLICANT: Malone, Carlos

APPLICANT: Malone, Carlos

APPLICANT: John

APPLICANT: Zyskind, Judith

APPLICANT: Zyskind, Judith

APPLICANT: Grant

APPLICANT: Grant

APPLICANT: Grant

APPLICANT: Grant

APPLICANT: Yamamoto, Robert

APPLICANT: Yamamoto, Robert

APPLICANT: Your Nobert

APPLICANT: Your Nobert

APPLICANT: No WANGER: US/10/282,122A

CURRENT APPLICATION NUMBER: 60/19,078

PRIOR APPLICATION NUMBER: 60/206,848

PRIOR APPLICATION NUMBER: 60/205,848

PRIOR APPLICATION NUMBER: 60/207,727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT 1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCCTGAATAAGATT 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 CGACATTTGTTCCAGCGCGCAGTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCAGTGGCGCCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT 877
                                                                                                                                                                                                                                                                                                                                                                                                                                           CGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAAATCCCAAAAGTATTGTGTTTT 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGCGGCGCTATTTCCGCAATTCATGCCGCAACAGCCGCAACTGATGCAGTATATC 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTCAACGCATTGCTCTATGCATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 360
                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCGGCTCGTTGTTTATGCTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGA 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGTGA 417
                                                                                                                                                                                                                                                                                                                                                                                                      61 CAGCAGTGGCGGCGCGCTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT
                                                                                                                                                                                                                                                                                                       758 GTGATTGCGTTTGAAGTGTTGAAGTGGGCGCGCGCGCTTACTTGATTTGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                        1 GIGATIGCGITIGAAGIGTIGAAGIGGGCAGGCGCGCGCTIACTIGATITGGCTGGGAAIC
                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                         .,
                                                                                                                                                                                                                                           Length 417;
                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                     Query Match 34.8%; Score 417; DB 14; L
Best Local Similarity 100.0%; Pred. No. 1.8e-134;
Matches 417; Conservative 0; Mismatches 0;
PRIOR FILING DATE: 1999-11-09
FRIOR APPLICATION NUMBER: US 09/711164
PRIOR FILING DATE: 2000-11-09
NUMBER OF SEQ ID NOS: 469
SOFTWARE: FAGLESQ for Windows Version 4.0
SEQ ID 0. 274
LENGTH: 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-282-122A-39598
; Sequence 39598, Application US/10282122A
; Publication No. US20040029129A1
                                                                                                                  TYPE: DNA
ORGANISM: Escherichia coli
                                                                                                                                                ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)...(417)
US-10-287-274-274
                                                                                                                                                                                                                                                                                                                                                                         818
                                                                                                                                                                                                                                                                                                                                                                                                                                          878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                         ें
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        업
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
```

```
974 CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGTGGTCGATATTATT 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGATGAAGGCGCTGAATAAGATTTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1034 GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481 GTGATGACCGGTTACGCCACGCTGGCGCACGCATTGCCGCCTGGATTAAAGGACCAAAG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 GCTTCTATCGCCGGGCTCCAGACCGGCTGGGGATACATATCGTACTGGTGGGCGTCGGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         794 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 Acrerodeceaeacecaaredeceaeacececrerreaaaceaeceararrecaarera 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361 ACCAAICCCAAAAGIAITGICTITICITGCCGCCIGITITCCGCAAITCATGAIGCCGCAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541 CAGATGAAGGCGCTGAATAAAGCGTTTGGTTGTTGTTTATGCTGGTAGGCGCGCTCCTG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     914 ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGGGGTATTTCCGGCAATTCATGCGGCAA 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
PRIOR FILING DATE: 2000-05-26

PRIOR APPLICATION NUMBER: 60/230,335

PRIOR FILING DATE: 2000-09-06

PRIOR FILING DATE: 2000-09-09

PRIOR FILING DATE: 2000-10-23

PRIOR PELLING DATE: 2000-10-23

PRIOR PELLING DATE: 2000-10-23

PRIOR FILING DATE: 2000-11-27

PRIOR FILING DATE: 2000-11-27

PRIOR PELLING DATE: 2000-11-27

PRIOR PAPLICATION NUMBER: 60/257,931

PRIOR PAPLICATION NUMBER: 60/257,931

PRIOR APPLICATION NUMBER: 60/267,636

PRIOR PRIOR APPLICATION NUMBER: 60/267,636

PRIOR PRIOR DATE: 2001-02-09

PRIOR FILING DATE: 2001-02-06

PRIOR FILING DATE: 2001-02-06

PRIOR FILING DATE: 2001-02-16

NUMBER OF SEQ ID NOS: 78614

SOFFWARE: Patentin Version 3.1

LENGTH: 621

LENGTH: 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 AIGACCTITGAAIGGTGGTTCGCCTATCTACTGACCTCAACTCTGTTGAGTCTTTCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           617 GECTCTGGTGCAATCACTATGACCACCTCGCTCAACCACGGTTATCCGGCCG--GTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 derricadececcarcaaraccardaceacercrarcaaccaredararcereececee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               854 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421 caaccecaacrescecacaaraccrearreresecareaceacaarreresararearr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 12; Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 382.2; DB 12; Length
Pred. No. 3.4e-122;
0; Mismatches 133; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1154 GCATCGGCGAGGCATGCGTGA 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601 degredecaadacaedegrea 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 31.9%;
Best Local Similarity 78.1%;
Matches 485; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA; ORGANISM: Salmonella typhi
US-10-282-122A-39598
```

```
854 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 20027, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1154 GCATCGGCGAGGCATGC 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              scerescescesias 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-282-122A-20027
                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                           APPLICANT: Admidio, Carles
APPLICANT: Admidio, Carles
APPLICANT: Admidio, Carles
APPLICANT: Admidio, Carles
APPLICANT: Chisen, Kari
APPLICANT: Chisen, Kari
APPLICANT: Cari, Cant
APPLICANT: Xu, H.
APPLICANT: Cari, Cant
APPLICANT: Xu, H.
APPLICANT: Xu,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              675 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCG-TGGG 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 GCGTCGATTGCCCGCTTGCAGACCGGGCTGGTTATTCATATCGTGCTGGTTGGCGTTGGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           734 GINGGGACGCIAITITCCCGCTCAGTGATTGCGTTTGAAGTGTAGAAGTGGGCAGGCGCG 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 crcescacrererecececrescrescrescrescerras as a contra de constante de consecuencies de contra                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     794 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 Argaccarreagregregregecraccrecreacarcarrarrercagecreredede
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 GGTTCCGGAGCGATTAATACCATGACCACCTCCATTAACCACGGATACCGCGGCGGCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      617 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTA--TCCGGCCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 618;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 31.2%; Score 375; DB 12; Length 6
Best Local Similarity 77.6%; Pred. No. 1.1e-119;
Matches 479; Conservative 0; Mismatches 135; Indels
MEDIA 10-222-122A-23973
Sequence 23973, Application US/10282122A
Sequence 23973, Application US/10282122A
Sequence 23973, Application US/10282122A
SEDICATION.
APPLICANT: Wang, Liangsu
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Haselbeck, Robert
APPLICANT: APPLICANT: Obleen, Kari
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Yamanoto, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-282-122A-2397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
APPLICANT: Onlean Again, Jodith APPLICANT: Syskind, Judith APPLICANT: Tawkick, John APPLICANT: Trawick, John APPLICANT: Porsyth, R. APPLICANT: Porsyth, R. APPLICANT: W. H. TILLE CF INTRAINED: 2013-02-20 CURRENT FILING DATE: 2013-02-20 CURRENT FILING DATE: 2013-03-22 CURRENT FILING DATE: 2010-03-21 CURRENT FILING DATE: 2010-03-21 CURRENT FILING DATE: 2010-03-21 COURTENT FILING DATE: 2010-03-31 COURTEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   974 CAGCCGCAACTGATGCAGTATATCGTGCTCGCCGTCACCACTATTGTGGTCGATATTATT 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1094 CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGAGCGCTTA 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1034 GIGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481 Gricaricarrescriarisceacionescenses de contrariones estas esta
301 Acidentedecaradocidados de contrator de 
                                                                                                                                                                                                                                                                                                    914 ACCAATCCCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAA 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541 CAGATGAAGGCGTTGAACAAAGTCTTTGGTTCACTGTTTATGCTGGTCGGGGCGCTGCTC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 Accadiccadadecarrerrirrirerescececererriresecarrirarerreresea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421 cadecedeaggreargecaraterecierreregecereceaecarecieregeargearr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 78614
SOTTWARE: Patentin vergion 3.1
SEQ ID NO 20027
ILENGTH: 618
TYPE: DNA
```

ò g ò В ò g 8 ò d  $\delta$ q ò 엄 ò ď ે g 8 g ò

```
974 CAGCCGCAACTGATGCAGTATATCGTGCTCGCGTCACCACTATTGTGGGTCGATATTATT 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1092 AGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGAGCGCTGT 1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 GGTTCAGGCGCCATCAATACCATGACGACGTCTATCAACCATGGATATCGTGGCGCGAGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 GCTTCTATCGCCGGACTCCAGACCGGACTGGGGATACATATCGTACTGGTGGGCGTCGGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 CTGGGTACGCTCTTTTCGCGCTCGCTTTTTGAAATTCTGAAATGGGCTGGCGC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    854 TCGCTGGCCTCTACTCAAICGCGTCGACAITTGTTCCAGCGCGCAGTTTTTGTGAATCTC 913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               675 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             794 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 GCTTATCTTATCTGGCTGGGTATCCAGCAATGGCG---CGCAGGCGCTATCGATCTGCAT 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               298 acreredeceaadadaarededagaredeerdricaaacdageararridreaareta 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           914 ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAA 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             418 caaccecaacteececadraccicatrorceecercacacaatreiesearatearr 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       478 grgandaccidentaccicacacregicacrandicaccinggarnaaaccaca 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 Angaccirngaangginggricgccranchachgaccicaacrchgchgagrchrictccg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               617 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCCGGCCG--GTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   735 TTGGG-ACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTTGAAGTGGGCAGGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GIGALGALCGGITACGCCACCCTTGCTCAACGG--AITGCTCTATGGATTAAAGGACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAGATGAAGGCGCTGAATAAAGCGTTTGGTTTGTTTATGCTGGTAGGCGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
29.0%; Score 348.2; DB 12; Length 623;,
Best Local Similarity 76.6%; Pred. No. 2.6e-110;
Matches 479; Conservative 0; Mismatches 138; Indels 8;
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR PILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR PILING DATE: 2000-05-23
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-09-06
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR PILING DATE: 2000-09-09
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR PILING DATE: 2000-10-23
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR PILING DATE: 2001-12-16
PRIOR PILING DATE: 2001-02-10
PRIOR PILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: DNA
; ORGANISM: Salmonella paratyphi A
US-10-282-122A-36679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            974 CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 1153
                                                                                                                                                                                                                         919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                     GCATCGATTGCCGGTTTGCAGACCGGGCTGGGTATTCATATTGTGCTGGTCGGGATCGGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GITGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCG 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 GCGTATCTGATTTGGCTCGGCATCCAGCAGTGGCGCGCGGCAGGCTCCATCAACCTGAAT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     913
                                                                                                                                                                                                                                                                                                                                                GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTA--TCCGGCCGGTG 674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301 ACGCTGGCTCTGACGCAAAACCGCGCCATCTGTTTAAGGGTGCGGTATTCGTCAACCTG 360
                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                 1 ATGACCTICGAAIGGTGGTICGCCTACCIGCTGCTGACAICCAITATCCTCAGCCTTTCTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 CTGGGGACCCTGTTCTCCCGCTCCGTGCCTTTGAGGTGCTGAAATGGGCCGGGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               854 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCCTCAGGTGCAGTACGTGCTGCTGGCGCGCGACCACTATTATCGTCGATATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541 CAGATGAAGGCCCTGAATAAAGTCTTTGGCTCGCTGTTTATGCTGGTTGGCGCGCTGCTT
                                                                                                                                                                                                                      557 ATGACCTTAGAATGGTGGTTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGT-GGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1034 GIGATGATCGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481 Granicarracirnacecarcecrececacearracecerecarearrananee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in Microorganisms
                                                                                                                                                                 Gaps
                                                                                                                                                              ж
Э
                                                                                               Length 618,
                                                                                            Score 357.4; DB 12; Length
Pred. No. 1.6e-113;
0; Mismatches 146; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 36679; Application US/10282122A
Publication No. US20040029129A1
GENERAL INFORMATION:
APPLICANT: Wang, Liangsu
APPLICANT: Malone, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Tawick, Molth
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Tawick, John
APPLICANT: Xu, H.
APPLICANT: Xu, H.
APPLICANT: Ku, H.
APPLICANT: Enserted: EliTRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1154 GCATCGGCGAGGCATGC 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGTCAGCGCGTCACGC 617
   ; ORGANISM: Enterobacter cloacae US-10-282-122A-20027
                                                                                            Query Match
Best Local Similarity 75.9%;
Matches 468; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-282-122A-36679
                                                                                                                                                                                                                                                                                                                                             617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 734 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
```

674

9

793

us-09-847-392-1.rnpb

```
206
                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            56
                                                                                                                                         ద
                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Trawick, Johnsel
APPLICANT: Trawick, Johnsel
APPLICANT: Carr, Grant
APPLICANT: Yamanoro, Robert
APPLICANT: Yamanoro, Robert
APPLICANT: Yamanoro, Robert
APPLICANT: Forestth, R.
APPLICANT: Yam, H.
APPLICANT: Yam, H.
APPLICANT: Yam, H.
APPLICANT: Van, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: 00/191,078
FRICR APPLICATION NUMBER: 60/202,028
FRICR APPLICATION NUMBER: 60/207,727
FRICR APPLICATION NUMBER: 60/207,727
FRICR FILING DATE: 2000-05-26
FRICR FILING DATE: 2000-05-26
FRICR FILING DATE: 2000-05-26
FRICR FILING DATE: 2000-10-23
FRICR FILING DATE: 2000-10-23
FRICR FILING DATE: 2000-110-23
FRICR FILING DATE: 2000-10-22
FRICR APPLICATION NUMBER: 60/257,931
FRICR APPLICATION NUMBER: 60/257,931
FRICR APPLICATION NUMBER: 60/257,931
FRICR APPLICATION NUMBER: 60/259,625
FRICR APPLICATION NUMBER: 60/259,930
FRICR FILING DATE: 2001-02-09
FRICR FILING DATE: 2001-02-09
FRICR FILING DATE: 2001-02-09
FRICR APPLICATION NUMBER: 60/259,930
FRICR FILING DATE: 2001-02-09
FRICR FILING DATE: 2001-02-00-00-00-00-00-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            326 IGATCGACATGACCCCGATGCGAGTCCGATAACATCCGCCCGGAGCGCCCTTGACCACGG 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       386 GGCCCCGGCTCAATTTCCTGCTGCCAGAACGCCGCTAAGTCCTCAACATAATCGTTAAAA 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCCAGTTCCGCATAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 446 AGGAACAGGGTGGCTATCGCGCCCCCCATTGAGTGCGCCAGGATATAACGCTTACGCCAC 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 AGAAATAATGTGGAATGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Remaining Prior Application data removed - See File Wrapper or PALM. NUMBER OF SEQ ID NOS: 78614
SOFTWARE: Patentin version 3.1
SEQ ID NO 7563
LENGTH: 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 24.9%; Score 298.8; DB 12; Length 1017; Best Local Similarity 79.4%; Pred. No. 6.6e-93; Matches 354; Conservative 0; Mismatches 92; Indels 0;
1152 TAGCATCGGCGAGGCATGCGTGAAA 1176
                                                                      598 redeceredechadachedeceerann 622
                                                                                                                                                                                                                        US-10-282-122A-7563/c
; Sequence 7563, Application US/10282122A
; Publication No. US20040029129A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
ORGANISM: Salmonella typhimurium
                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Wang Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Ohlsen, Kari
APPLICANT: Wall, Joniel
APPLICANT: Wall, Daniel
APPLICANT: Tawick, John
APPLICANT: Tawick, John
APPLICANT: Tawick, John
APPLICANT: Tawick, John
APPLICANT: Fawick, John
APPLICANT: Fawick, John
APPLICANT: Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-282-122A-7563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
à
                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
```

APPLICANT: Travick, John
APPLICANT: Travick, John
APPLICANT: Travick, John
APPLICANT: Travick, John
APPLICANT: Franck, Robert
APPLICANT: Franck, Robert
APPLICANT: Franck, Robert
APPLICANT: AL, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REPERBERCE: ELITAA.034A
CURRENT APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/200,03-21
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/203,035
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,337
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-010-23
PRIOR PILING DATE: 2000-01-22
PRIOR PILING DATE: 2000-01-22
PRIOR PILING DATE: 2000-01-22
PRIOR PILING DATE: 2001-02-09
ö 420 241 TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG 300 266 TGGTCGATGATGAAGATATCAAAACCGAGATGAAAAAGGTCATACGCCCAGTTCAGCGTAT 207 146 cgalalacegacalaececacegalaceraeceaececearalaacececerecece 86 reaceccacaaarcecrcacceccaraccaaaaaceccaarriricrcricrr rtracaraacricroaareceeccadeacaaareacearcearcearcerre 301 CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC Gaps Score 297.2; DB 12; Length 1017; Pred. No. 2.4e-92; 0; Mismatches 93; Indels 0; 421 TCCCAGTCTTTTGCTGCTGAACAT 446 Sequence 39597, Application US/10282122A, Publication No. US20040029129A1 receasteringerscrapager 1 APPLICANT: Wang, Liangsu APPLICANT: Zamudio, Carlos APPLICANT: Malone, Cheryl APPLICANT: Haselbeck, Robert APPLICANT: Ohlsen, Kari APPLICANT: Zyskind, Judith Query Match
Best Local Similarity 79.1%;
Matches 353; Conservative ; TYPE: DNA; ORGANISM: Salmonella typhi US-10-282-122A-39597 RESULT 12 US-10-282-122A-39597/c

ô

120 327 180 267

387

207

360

87

420

27

셤 δ В ö d ò 셤 g ò ద ò g ð 셤

```
APPLICANT: Mall, Daniel
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Carr, Grant
APPLICANT: Yamamoto, Robert
APPLICANT: Yorsyth, R.
APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
CURRENT PEPLICATION NUMBER: US/10/282,122A
CURRENT PEPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR FILING DATE: 2000-05-23
PRIOR FILING DATE: 2000-05-23
PRIOR PLING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITACGIAGCICICAATACGCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     386 descesescrica acercerece as a consequence as a conseq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361 TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGGTTTTCTCTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86 rececceasaarcesreacecececaradasaaseaseaaaaacerrrrererer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                446 AAAAAcAgcgrcgAAArggcgcccccarggagrgcgcaagaAraAccgcrrgcgcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   266 recrearearcaceacarceaaceceararecaceaceacercaraceceacerceceacerar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 CGAAAACGGACAAAGCGCACCGGAATGTCATCCACCACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 AGABATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGGGACCGGAACGTCCCTGCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
PRIOR FILING DATE: 2001-02-16
Remaining Prior Application data removed - See File Wrapper or PALM, NUMBER OF SEQ ID NOS: 78614
SOFTWARE: Patentin version 3.1
SEQ ID NO 20024
LENGTH: 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ô
                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 290.8; DB 12; Length 990;
Pred. No. 4e-90;
0; Mismatches 97; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCCAGTCTTTTGCTGCTGAACAT 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 23738, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receasterriticiscisaaacar
                                                                                                                                                                                                                                                                                                             ORGANISM: Enterobacter cloacae US-10-282-122A-20024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Wang, Liangeu
APPLICANT: Wand, Liangeu
APPLICANT: Mandone, Carlos
APPLICANT: Masone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Carr, Grant
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 24.2%;
Best Local Similarity 78.3%;
Matches 349; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-282-122A-23738/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ଚ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-282-122A-20024/c
Sequence 20024, Application US/10281122A
Publication No. US20040029129A1
Sequence 20024, Application US/10281122A
Publication No. US20040029129A1
GENERAL INFORMATION:
APPLICANT: Wang, Liangeu
APPLICANT: Malone, Cheryl
APPLICANT: Malone, Cheryl
APPLICANT: Malone, Cheryl
APPLICANT: Trawick, John
APPLICANTON NUMBER: 60/206, 48
PRIOR APPLICATION NUMBER: 60/203, 37
PRIOR APPLICATION NUMBER: 60/203, 32
PRIOR APPLICATION NUMBER: 60/203, 33
                                                                                                                                                                         GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                             CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGGAACGTCCCTGCCCGCGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCCAGTTCCGCATAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTACGTAGCTCTCAATACGCCCCGGGCAGATGACTACCACCCGGGTCATGGTGCTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 206 ritracaracricicaarigoggocagacaarigacgarogrocgarogragagarogramo 147
                                                                                    446 AGGAACAGGGTGGCTATCGCGCCCCCATTGAGTGCGCCAGGATATAACGCTTACGCCAC 387
                                                                                                                                                                                                                                                                                                                                                                                                                                   326 TGATCGACATGACCCCGATGCGGGTCCGATAACATCCGCCCGGAGCGCCCTTGACCACGG 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361. TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT 420
         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAAAACGGACAAAGCGCACCGGAATGTTATCCACGCCGATAAACTCCGCCTCTTCCCGC 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           266 regregargargararcaaaacceagargaaaagercararaceccagrrcaecerar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCCAGTCTTTTTGCTGCTGAACAT 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            receasteritrectecteaaacar
,⊣
                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                         61
```

```
US-10-282-122A-41840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   446 AGAAAAAGCGTGGCAATCGCTCCGCCCATAGAATGGGCAAGGATAAACCGTTTTCGCCAG 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCATCAACATAATCATTAAAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCCGGAACGTCCCTGCCCGGGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                326 TTAACCACGTGTCCGCGGTGGGTATCTGAGAGCAGGCGGCCCGAGCGTCCCTGCCGGCA 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITIACGIAGCICTCAAIACGCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 CGAAAACGGACAAAGCGCACCGGAAIGTCATCCACACTAAAACTCTGCTTCATCACGC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    386 TGTCCAGGAACCACCTGCTGCTGCCAGAGCGCGGCCAGGTCATCAACATAGTCGCTGAAG 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266 TGGTCAATGATCATCACGTCAAAGCCGCAGTGAAAGAGATCGTAGGCCACTTCAGCATAC 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGGCGTTTACGCCAC 60
PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR FILING DATE: 2000-09-06
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR PEDICATION NUMBER: 60/242,578
PRIOR PELLING DATE: 2000-10-09
PRIOR PELLING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR PELLING DATE: 2000-12-22
PRIOR PELLING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR PELLING DATE: 2001-02-16
PRIOR PELLING DATE: 2001-02-09
PRIOR PELLING DATE: 2001-02-09
PRIOR PELLING DATE: 2001-02-09
PRIOR PELLING DATE: 2001-02-06
PRIOR PELLING DATE: 2000-11-27
PRIOR PELLING DATE: 2000-11-27
PRIOR PELLING DATE: 2000-11-27
PRIOR PELLING DATE: 2001-02-06
PRIOR PELLING DATE: 2000-11-27
PRIOR 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              146 caaaagoggacaaagograccegracarcerceacecerrraaarricaecirricecec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86 TGTCGCCAGAAATCCGTCAGCGCCCCATGCTAAAGGCCGCAAACGCGTTTTCTCGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 12; Length 990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23.0%; Score 276.4; DB 12; Length 76.2%; Pred. No. 4.3e-85; cive 0; Mismatches 106; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 41840, Application US/10282122A
Publication No. US20040029129A1
GENERAL INFORMATION:
APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Malone, Rebert
APPLICANT: Oblsen, Rari
APPLICANT: Toblsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Zyskind, Judith
APPLICANT: Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421 TCCCAGTCTTTTGCTGCTGAACAT 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       receaerectriricieceaacar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 23.0%
Best Local Similarity 76.2%
Matches 340; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
US-10-282-122A-41840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-282-122A-23738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
APPLICANT: Trawick, John
APPLICANT: Grant
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Vanamoto, Robert
APPLICANT: NEWITH, R.
TITLE OP INTENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA,034
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 66/191,078
PRIOR APPLICATION NUMBER: 66/200,727
PRIOR APPLICATION NUMBER: 66/230,334
PRIOR FILING DATE: 2000-09-06
PRIOR APPLICATION NUMBER: 66/25,625
PRIOR APPLICATION NUMBER: 66/25,625
PRIOR APPLICATION NUMBER: 66/25,625
PRIOR APPLICATION NUMBER: 66/25,636
PRIOR APPLICATION NUMBER: 66/25,636
PRIOR APPLICATION NUMBER: 66/25,636
PRIOR APPLICATION NUMBER: 66/25,636
PRIOR APPLICATION NUMBER: 66/260,636
PRIOR APPLICATION NUMBER: 66/260,636
PRIOR APPLICATION NUMBER: 66/260,636
PRIOR PILING DATE: 2001-10-216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCCGCAACTGATGCAGTATATCGTGCGCGTCACCACTATTGTGGTCGATATTATT 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             decricededecarrahcheardaechereceareaechraecearderaeceardesrein 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           675 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGT-GGG 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 CTTGGTGCCCTGGTCTCTCAATCCTTACTGGAATATTAAAGTGGCTCGGTGCG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 derraktrinaktrindetrinderatrekackardekendekedecedestekrindakeriseki 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     854 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCCGCTGGTGCAATTGACCTTAAA 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 gcacridecaaacagrargcccagecgraagcricriraaacgregegergrirgrraacte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 914 ACCAATCCCAAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATGTCGCGCAA 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361 ACCAATCCAAAAGCATTGTTTTTTTGGCCGCGTTATTTTCCACAATTTGTACTGCCACAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    617 GGCTCTGGTGCAATCAACACTATGACCCACCTCGAACCACGGTTATC--CGGCCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 écriccarridecedecriaciacrecerridecedecararcerorrideridecerceer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 Argaccinadacidendennaacciancidendacaacanidancencagentinionee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           734 GINGGGACGCIATITICCCGCTCAGTGATTGCGTTTGAAGTGTAGAAGTGGGCGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>caaccecaegeseacacataringarinnesecaceaceacageariercaratarinare</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۳
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22.9%; Score 275; DB 12;
67.3%; Pred. No. 9.9e-85;
ilve 0; Mismatches 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 22.9
Best Local Similarity 67.3
Matches 418, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Yersinia pestis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
```

Search completed: March 28, 2004, 20:43:05 Job time : 518.752 secs

Run

```
B2566001 pacs2-164
A0042356 4007198 B
A0991154 Rfc02035
BX462111 BX462111
ALL06730 Drosophil
BX462111 BX462111
BX45013 Drosophil
BX41672 BX416727
BX425603 BX425603
BX425603 BX45603
BX45609 Drosophil
CB28143 ru94H05.19
BX746722 BX746722
BX746722 BX746722
BX736097 BX746722
BX736097 BX376097
BX381601 BX316097
BX381961 BX376097
BX381961 BX381961 BX381961
BX381961 BX381961 BX381919 BX381988 A65757 BX
BR665319 153219 BX
BR665319 153219 BX
BR773988 465757 BX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AQ858095 168 03-NOV-1999 DNA linear GSS 03-NOV-1999 nbeb0011L14f CUGI Rice BAC Library (EcoRI) Oryza sativa (japonica cultivar-group) genomic clone nbeb0011L14f, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Spermatophyta; Viridiplantae; Streptophyta; Embryophyta; Poaceae;
Ehrhartoldeae; Oryzae; Oryza.

1 (bases 1 to 769)
Ming, R.A. and Dean, R.A.
A BAC End Sequencing Framework to Sequence the Rice Genome Unpublished (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AV596505 AV596505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A BAC End Sequencing Framework to Sequence Unpublished (1998)
Contact: Wing RA
Clemson University Genomics Institute
Clemson University
100 Jordan Hall, Clemson, SC 29634, USA
Tel: 864 656 7288
Fax: 864 656 4293
Email: rwing@clemson.edu
Seq primer: TRATACGACTCACTATAGGG
Class: BAC ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALIGNMENTS
                                                                                                                                                               BX416727
BX425603
CB281433
BX746722
BX167575
CNS00BSO
ALGS00BSO
ALGS00BSO
ALGS00BSO
ALGS00BSO
ALGS00BSO
BBG64436
BCS01BSS
CNS015X
BCS01BSS
CNS015X
BCS01BSS
CNS015X
BCS01BSS
BCS01BS
BCS01BSS
BCS01BS
BCS01BS
BCS01BS
BCS01
AF114214
BZ548406
BZ548406
CB0542356
AQ991154
CNS014YP
CNS016GH
BH209707
BY401573
BX410573
BX410573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bequence.
AQ858095
AQ858095.1 GI:6208552
                                                                                                                                                                                                                                                                                                                                                                                                                                          4 8 8 8 4 4 6 7
                                                                                                                                                                                                                                                   8888
888
988
988
988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
AQ858095
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                  AQ858095 nbeb0011L
AQ859250 nbeb0011L
AY080100 AY080100
AL149432 Anopheles
                                                                                                           March 28, 2004, 14:07:39; Search time 3810.91 Seconds (without alignments) 9403.168 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
                                                                                                                                                                                                               1 agaaataatgtggagatcgc.....atgtcggatgcggcgtaaac 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                      55026578
              5.1.6
Compugen Ltd.
                                                                                                                                                                                                                                                                                                  27513289 segs, 14931090276 residues
                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
              GenCore version
Copyright (c) 1993 - 2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                             - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AQ858095
AQ859250
AY080100
CNS01LBR
                                                                                                                                                                                                                                              IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em gas prod.; em gas vrl:; em gas vrl:; gb gas1:* 1:*
                                                                                                                                                                                                                                                                                                                                                                    seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hum: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   fun:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mem:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mus:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_estba::
em_esthum::
em_esthum::
em_estrur::
em_estrur::
em_estrur::
em_estrur::
em_estrur::
em_estrur::
gb_estr::
gb_ntc::
gb_ntc::
gb_estr::
gb_estr::
gb_estr::
gb_estr::
                                                                                                                                                                             US-09-847-392-1
1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  estom:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_gss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52.9
30.9
28.2
                                                                                                                                                                                                 Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       634.6
371
339
218.2
                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
                                                                              OM nucleic
                                                                                                                                                                                                                                                                                                                                                                  Minimum DB
Maximum DB
                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                               .
100
                                                                                                                                                                                 Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ño.
```

a

```
Contact: Wing RA
Clemson University Genomics Institute
Clemson University
100 Octachan Hall, Clemson, SC 29634, USA
Tel: 864 656 7288
Fax: 864 656 4293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: rwing@clemson.edu
Seq primer: GGAAACAGCTATGACCATG
Class: BAC ends
High quality sequence start: 41
High quality sequence stop: 415.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AQ859250
AQ859250.1 GI:6209707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . .473
                                                                                                                                                                                                                                                                  661 TTATC 665
                                                                                                                                                                                                                    700
                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
AQ859250/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                  g
                                                                                                                                                                                                               셤
                                                                         ઠ
                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                            /done_libs_coll_bill_coll_bill_coll_library (EcoRI)"
/done_libs_coll_bill_coll_bill_coll_library (EcoRI)
/done_libs_coll_bill_coll_bill_coll_library (EcoRI)

Rice is the most important food crop in the world. Half of the world population, especially those inhabiting highly populated areas of the humid tropics and subtropics, rely on rice as their primary source of carbohydrate.

Monocotyledonous rice is a diploid plant (2n=24) with a haploid genome equivalent of 411 Mbp (Arumuganathan and Barle, 1931). The relatively small genome of rice, three times larger than that of Arabidopsis, makes it suitable for genomic studies. In order to facilitate positional cloning, physical mapping and genome sequencing of rice, we have constructed a BAC library from Oryza sativa, Nipponbare variaty using EcoRI as the cloning enzyme. The library contains 52.296 clones with an average insert size of 121 Kb providing approximatley 15 haploid genome equivalents. The deep coverage allows the isolation a particular sequence with a probability of 99.9 %. Three high density filters, each containing 18,432 clones clouny screening and can be requested from the Clemson university BAC/EST Resource Center (www.genome.clemson.edu)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          102 AGAAATAATGGGAGATGGCACGGCCATGGAATGTGCCAGTATATAGCGTTTACGCCAC 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTTTTAGCGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCCACAAAATAGAC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGATTAACATGCCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              282 IGGICGAIGAITAAGACAICAAACCCCAAAIGGAACAGGICAIAGGCCAGTICCGCAIAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITIACGIAGCICICAAIACGCCCCCGGGCAGAIGACIACCACCCGGICAIGGIGCIGIGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGTCGATGATTAAGACATCAAAACCCCAAATGGAACAGGTCATAGGCCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ceaaaaceacaaaececaceeaarercarcaacacaaraaacrcrecrrcarcace
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGACGCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAACGCGTTTTCTCTTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCCAGTCTTTTGCTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAAACCCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCCAGTCTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 AGAAATAATGTGGAGGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGACGCCAGAAATCAGTCAGCGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTTGTT
                                                                                        /organism="Oryza sativa (japonica cultivar-group)"
/mol_type="genomic DNA"
/strain="Japonica"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52.9%; Score 634.6; DB 28; Length 769; larity 99.1%; Pred. No. 9.4e-183; Conservative 0; Mismatches 4; Indels 2;
                                                                                                                                                                                                                                         tissue_type="Leaf"
lab_host="E. coli DH10B"
quality sequence start: 42 quality sequence stop: 454 Location/Qualifiers
                                                                                                                                                                    cultivar="Nipponbare"
                                                                                                                                                                                           db_xref="taxon:39947"
clone="nbeb0011L14f"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
High
High
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Sim
Matches 659;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
```

ò g ò 임 ò 엄 ò g à 셤 ò В à ద ઠે 엄

```
AQ859250 110-0 473 bp DNA linear GSS 03-NOV-1999 nbeb0011L14r CUGI Rice BAC Library (EccRI) Oryza sativa (japonica cultivar-group) genomic clone nbeb0011L14r, genomic survey
                                  900
641
                                                                    669
                                                                                                                                                                                                                                                                                                                                                                                                                             Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae;
Ehrhartoideae, Oryzeae, Oryza.

1 (bases I to 473)
Wing,R.A. and Dean,R.A.

A BAC End Sequencing Framework to Sequence the Rice Genome Unpublished (1998)
                                                                                                                              TITAAGCCIGICGCCAGGCICIGGIGGAATCAACACIAIGACCACGCCCCCCCCCACGG
TTTTTTTAGGGTGCCTGACACACGCTGCGACAGTAGCGTATTGTGGCACAAAAATAGAC
                                                                  642 ACACCGGGAGTTCATCATGACCTTAGAATGGTGG-TTGCCTACCTGCTGACATCGATCA-
                                  541 ACACCGGGAGTICATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCAT
                                                                                                         TTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGG
```

us-09-847-392-1.rst

Page

ô

295

9

240

ORIGIN

à a g ò 셤 à 심 à 유  $\stackrel{>}{\circ}$ g ò

ö

```
CNSOILBR 110-201 BNA linear GSS 14-JUN-2001 Anopheles gambiae GSS T7 end of clone 18P02 of Notrebamel library from strain PEST of Anopheles gambiae (African malaria mosquito), genomic survey sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission

Submitted (16-FEB-2000) Genoscope - Centre National de Sequencage:
By 191 91006 EVRY cedex - FRANCE (E-mail: seqref@genoscope.cns.fr
Web: www.genoscope.cns.fr)

(bases 1 to 815)

(bases 1 to 815)

Direct Submission

Submitted (16-FEB-2000) BBMI, Institut Pasteur, 25, rue du Dr.

Shoux, Paris 75015, France

This clone is from an A. gambiae BAC library provided by F.H.

Collins and sequenced by Genoscope in collaboration with the
Laboratory of Biochem. and Biol. Molec. of Insects, Institut
         /note="Marine viruses were isolated from 200 liters of surface seawater using a combination of differential filtration and density-dependent gradient centrifugation. Linker-amplified shotgun libraries were constructed by randomly shearing the total marine viral community DNA, end-repairing, ligating dsDNA linkers to the ends, and amplifying the fragments using Vent DNA polymerase. The resulting fragments were ligated into the pSMART vector and electroporated into MC12 cells (Lucigen; Middleton, W1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGGAACGTCCCTGCCCGCGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 234 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGGGA 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                174 TGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 TTTACGTAGCTCTCAATACGCCCCCGGGCAGATGACTACCACCCGGTCATGGTGCTGTGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                      354 AGAAATAATGTGGAGATCGCACCGCCCATCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 IGGTCGATGATTAAGACATCAAACCCCAAATGGAACAGGTCATAGGCCAGTTCCGCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAATATGTGGAGATCGCACCGCCCCTCGAATGTGCCAGTATATAGCGTTTACGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            294 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAAATCATTAAAG
                                                                                                                                                                                                                                                                                                                                                            0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Anopheles gambiae (African malaria mosquito)
Anopheles gambiae
Eukaryota, Merazoa, Arthropoda; Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Nematocera, Culicoidea;
                                                                                                                                                                                                                                                                                                          Query Match 28.2%; Score 339; DB 28; Length 687; Best Local Similarity 100.0%; Pred. No. 4.1e-92; Matches 339; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 CGAAAACGGACAAAGCGCACCGGAATGTCATCCACACCA 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAAAACGGACAAAGCGCACCGGAATGTCATCCACCA 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ĀL149432
AL149432.1 GI:7009911
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Anopheles.
1 (bases 1 to 815)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pasteur.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
high density filters, each containing 18,432 clones (doubly spotted), represent the whole library for colony screening and can be requested from the Clemson University BAC/BST Resource Center (www.genome.clemson.edu)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AY080100 Scripps Pier (La Jolla, CA) uncultured virus community uncultured marine virus genomic clone SIO51p3E9L, genomic survey
                                                                                                                                                                                                                                   313 AAGGGCACCGGAATGTCATCCACACTAAACTCTGCTTCATCACGCTGACGCCAGAAA 372
                                                                                                                                                                                                                                                                                       414
                                                                                                                                                                                                                                                                                                                                   432
                                                                                                                                                                                                                                                                                                                                                                               354
                                                                                                                                                                                                                                                                                                                                                                                                                            492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAAGCCTGTC 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Viruses; environmental samples.

1 (bases 1 to 687)

Breitbart,M., Salamon,P., Andresen,B., Mahaffy,J.M., Segall,A.M., Mead,D., Azam,F. and Rchwer,F.
Genomic analysis of uncultured marine viral communities
Proc. Natl. Acad. Sci. U.S.A. 99 (22), 14250-14255 (2002)
22284988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="uncultured marine virus"
/mol_type="genomic DNA"
/db_reref="taonomic B6671"
/clone="gf051p391"
/clone=lib="Scripps Pier (La Jolla, CA) uncultured virus
                                                                                                                                                                                                                                                                473 AAGGGACGGAATGTCATCCACACAGTAAACTCTGCTTCATCACGCTGACGCAGAAA
                                                                                                                                                                                                                                                                                                                                                                 TCAGTCAGCGGTCCCATGGTAAAAGCAGCAAACGCGTTTTCTCTTGTTTCCCAGTCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCGCGGCGC
                                                                                                                                                                                                                                                                                                                         373 TCAGICAGCGGTCCCAIGGTAAAAGCAGCAAACGCGITTTCICITGITTCCCAGTCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGTTTTTTTAAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGTTTTTTTAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCTGACACACGCTGCGACAGTAGCGTATTGTGGCCACAAAATAGACACACGGGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCAGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTAT--CCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTGACACACACTGCGACAGTAGCGTATTGTGGCACAAAAATAGACACACCGGGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTAACGCTGTC
                                                                                                                                                                                         Gaps
                                                                                                                                                                                         2
                                                                                                                                          Score 371; DB 28; Length 473;
Pred. No. 5.1e-102;
0; Mismatches 10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTC 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATAAAGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92102,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Rohwer F
Biology Dept.
Ban Diego State University
5500 Campanile Dr. San Diego, CA
Tel: 6195941336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         forest@sunstroke.sdsu.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uncultured marine virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.
AY080100
AY080100.1 GI:24745289
                                                                                                                                       Query Match
Best Local Similarity 97.0%;
Matches 389; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Class: shotgun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fax: 619595676
Email: forest@
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             233 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         613
                                                                                                                                                                                                                                                                                                                                                                           413
                                                                                                                                                                                                                                                                                                                                                                                                                         433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
AY080100/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
MEDLINE
PUBMED
```

FEATURES

us-09-84/-392-1.rst

pacs1-60\_1079.sl pacs1-60 Pseudomonas aeruginosa genomic clone pacs1-60\_1079, genomic survey sequence. ô 822 882 942 61 GGACCGGGCTGAACCTCCTGCTGCCAGAATGCCGCCAGATCATCAACATAATCATTAAAG 120 9 Pseudomonas aeruginosa Barceriai, Fordeobacteria; Gammaproteobacteria; Pseudomonadales; Pseudomonadaceae; Pseudomonas. 1 (bases 1 to 1095) Spencer, D.H., Raymond, C.K., Smith, E.E., Sims, E.E., Hastings, M., Burns, J.L., Kaul, R. and Olsen, M. V. Whole-Genome-Sequence variation among multiple isolates of Psedomonas aeruginosa library J. Bacteriol. (2002) In press 883 TGATCGACATGACCCCGATGCGGGTCCGATAACATCCGCCCGGAGCGCCCTTGACCACGG 763 AdgaAcadodroderariodedecececearroadroceceadoararaacderraedeeae 823 GGCCCCGGCTCAATTTCCTGCTGCCAGAACGCCGCTAAGTCCTCAACATAATCGTTAAAA 121 CGATTAACATGCCCGAGATGCGGATCGGCTAACAGGCGACCGGAACGTCCCTGCCCGGA 41 idaicaadiderredecerdeceracerdereraceredecedecedecedadededeced 1 AGAAATAATGTGGAAGATCGCACCGCCCATCGAATGTGCCCAGTATATAGCGCTTTACGCCAC 774 TGTTGAAGTGGGCAGGCGCGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGC--GCGC Gaps Gaps /organism="pseudomonas aeruginosa"
/mol\_type="genomic DNA"
/strain="1-60"
/db\_xref="taxon:287"
/clone="pacs1-60"/079"
/clone="pacs1-60"/079"
/note="clinical isolate 1-60 Whole genomic shotgun library." ö 3, DB 28; Length 954; Length 1095; Score 120.6; DB 28; Length Pred. No. 4.7e-25; 0; Mismatches 44; Indels 7.1%; Score 85.4; DB 28; llarity 54.1%; Pred. No. 3.2e-14; Conservative 0; Mismatches 181;

0y 802 GATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGCAATTGACCTTAAATCG 856	RESULT 8  CRO42356/C CB042356 231 bp mRNA linear EST 15-JAN-2003  LOCUS DEFINITION 4007199 BARC-EMBRAPA 316BOV Bos indicus cDNA clone 316BOV_1P12  ACCESSION CB042356 VERSION CB042356.1 GI:27761601  KRYWORDS EST. SOURCE BOS indicus (zebu) CRGANISM Bos indicus (zebu)		COUMENT Contact: Adilson F. da Mota  CONMENT Gene Evaluation and Mapping Laboratory Gene Evaluation and Mapping Laboratory USDA, ARS, Animal and Natural Resources Institute Bldg. 200 Rm3 BARC-Bast, Beltsville, MD 20705, USA Tel: 3015048414 Email: amota@cnpgl.embrapa.br Single pass sequencing. Bases called and trimmed with phred 0.000925 using options -trim alt' -trim_fasta. Wector identified by cross_match using options -minmatch 12 -minscore 18	And	/sex="female"
Db	RESULT 7 BZ566001/c LOCUS DEFINITION pacs2-164 5858.x1 pacs2-164 Pseudomonas aeruginosa genomic clone pacs2-164-5858, genomic survey sequence. ACCESSION BZ566001.1 GI:27194705 KEYWORDS	SCURCE Pseudomonas aeruginosa ORGANISM Pseudomonas aeruginosa Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales; Pseudomonadaceae; Pseudomonas.  REFERENCE 1 (bases 1 to 1199) AUTHORS Spencer, D.H., Raymond, C.K., Smith, E.E., Sims, E.E., Hastings, M., Burns, J.L., Kaul, R. and Olsen, M.V.  TITLE Whole-Genome-Sequence variation among multiple isolates of Pseudomonas aeruginosa library	Φ	// June="personate of the color	Qy 684 GCTGGGCTTCAGACCGGACTGCGATTCATATTGTGCTGGTTGGGGTTGGGGTTGGGACGC 743

created as part of a collaborative project between the ARS Gene Evaluation and Mapping Laboratory and the EMBRAPA Dairy Cattle Research Center under the sponsorship of USDA, ARS/EMBRAPA-LABEX program in animal genomics. RNA extracted on 6/8/02, RT with Supersoript II at 37 deg C, annealing temperature, PCR with 16mer AM5."

CGACATTIGITCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTT 937 cecceireeiricerderreearrigereaccaarciaeacceaacceaacedarcereire 142 CTGGCGGCGCTATTTCCGCCAATTCATCCTGCCGCAACAGCCGCAACTGATGCAGTATATC 997 82 141 ATGITGECGIGCIGCIGCAGINCATCATCATCGCCAAGCCGCTGCITTCGCAACTCGGC Gaps 998 GIGCICGGCGICACCACTATIGIGGICGATATIATIGIGATGATCGGTTACGC 1050 53 .. 0 81 ATCCTGGCGGCGACGATGGTGTTCGTCGACCTGATCGTCATGCACGGCTATGC Length 231; Score 53; DB 14; Length 23 Pred. No. 0.00012; 0; Mismatches 75; Indels 4.4%; ilarity 56.6%; Conservative Query Match Best Local Similarity 98; 938 201 Matches ORIGIN g à g ò

ö

AQ991154 linear GSS 14-AUG-. Rfc02035 Photorhabdus luminescens strain W14 M13 library Photorhabdus luminescens genomic clone PLG02035, genomic survey LOCUS RESULT 9 AQ991154

AQ991154 AQ991154.1 GI:9649748 sequence. ACCESSION VERSION KEYWORDS SOURCE ORGANISM

Photorhabdus luminescens
Photorhabdus luminescens
Bacteria, Proteobacteria, Gammaproteobacteria; Enterobacteriales;
Enterobacterialeses, Photorhabdus.

1. (bases 1 to 667) REFERENCE AUTHORS

franch-Constant,R.H., Materfield,N., Burland,V., Perna,N.T.,
Daborn,P.J., Bowen,D. and Blattner,R.R.
Agenomic sample sequence of the entomopathogenic bacterium
Photorhabdus luminescens W14: potential implications for virulence
Appl. Environ. Microbiol. 66 (8), 3310-3329 (2000)

TITLE

10919786 MEDLINE PUBMED COMMENT JOURNAL

Contact: ffrench-Constant RH
Department of Baiology and Blochemistry ,
University of Bath
South Building, Bath BA2 7AY, UK
1441 1225 826621
Fax: (44) 1225 826679
Email: besrfcobath ac.uk
This is one of £ 2,122 random reads from the MI3 library. For
annotation of identified clones (BLASTX, BLASTX and mapping to E.

primer: M13 Forward source

FEATURES

Acids Res.

Location/Qualifiers

Location/Qualifiers

1. 667

/organism="Photorhabdus luminescens"
/mol\_type="genomic DNA"
/strain="wixt"
/db\_xref="taxon:29488"
/clone="phG02035"
/dev\_stage="primary phase variant"
/clone\_lib="Photorhabdus luminescens strain W14 M13
library"

/note="Genomic DNA from strain W14 was size selected (1-2 cb) and then cloned into M13 Janus."

CNS014YP 922 bp DNA linear GSS 26-JUL-1999 Drosophila melanogaster genome survey sequence SP6 end of BAC BACN12B16 of DrosDAC library from Drosophila melanogaster (fruit ô Submitted (23-ULL-1999) Genoscope - Centre National de Sequencage : BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr)

- Web : www.genoscope.cns.fr)

- Web : www.genoscope.cns.fr)

- Collaboration of this BAC-end sequence was carried out as part of a collaboration with the European Drosophila Genome Project (EDGP) - http://www.edgp.ebi.ac.uk - This Drosophila melanogaster BAC http://www.edgp.ebi.ac.uk - This Drosophila melanogaster BAC d'Etude du Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector 564 144 565 ATAAATATTTCAACGTCATTNATATATAGTCAAATTTTTCTACATGCCCTTTTTGTGGA 624 25 CCCATCGAATGTGCCAGTATATAGCGTTTACGCCACGGACCGGGCTGAACCTCCTGCTGC 505 cccairgaargagcraacccaraacacragaaraargacgaggaagaarricrrrrcg CAGAATGCCGCCAGATCATCATCATTAAAGCGATTAACATGCCCGAGATGCGGA Drosophila melanogaster (fruit fly)
Drosophila melanogaster
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila. .; 0 Length 667; Indels Score 44.8; DB 28; Pred. No. 0.069; ); Mismatches 68; TCGGCTAACAGGCGACCGGAACGTCCCTGCCCG 177 rergeaagearecracagearececerace 657 0; Mismatches fly), genomic survey sequence. AL104779 AL104779.1 GI:5616793 3.78; Similarity 55.6 85; Conservative 85, GSS. Query Match Best Local S: Matches 85 625 85 145 ACCESSION VERSION KEYWORDS SOURCE ORGANISM LOCUS DEFINITION REFERENCE AUTHORS TITLE JOURNAL RESULT 10 CNS014YP FEATURES COMMENT g ઠે g ò 굄

melanogaster" /organism="Drosophila me/mol\_type="genomic DNA"
/mol\_type="genomic DNA"
/clone="BACN12B16"
/clone="BACN12B16"
/clone="lib="DrosBAC"
/plasmid="pBeloBAC11"
/noce="end : SP6" Location/Qualifiers source

Length 922; Indels 3.4%; Score 41.4; DB 29; llarity 24.3%; Pred. No. 0.91; Conservative 95; Mismatches 133; Query Match Best Local Similarity

ORIGIN

. 0

568 AWWYYKWCTAAHYWCTMTCATATBCTYTYCCCCACAAYMAAMTCYTACTYCKCTYYMCYM 627 ACCCCAGAAATCAGTCAGCGGTCCCATGGTAAAAGCAGCAAAAGCGGTTTTCTCTTGTTTC 422 687 AAAACGGACAAAGCGCACCGGAATGTCATCCACACCAGTAAACTCTGCTTCATCACGCTG 303 363 ઠે ઠે g 엄

482 423 CCAGTCTTTTTGCTGCTGAAACATCGGGTAATCTGCCTCTTAAACCACGTAAAATCGTTT  $\delta$ 임

TITITIAGCGIGCCIGACACACGCIGCGACAGIAGCGIATIGIGGCACAAAAAIAGGCAC 542

ð

ò 임 ò

```
CNS016GW 1019 bp DNA linear GSS 26-JUL-1999 Drosophila melanogaster genome survey sequence T7 end of BAC BACN16011 of DrosBAC library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission
Submission

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            475 bp DNA linear GSS 15-NOV-2002
Sml Schistosoma mansoni genomic clone Sml-41P23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            949 BYCCGGKTTTKTTCHTGGGKTTKGGGTKKTGGGGKGTTCNKKKGKCVHTTTKKKKKKKKK 1008
    320 TGSNSCNSKKSAAKTATSGSGSKKKGSKTASTTSKKKSSKSKKKSSTSKKKKSKSKSKA 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     889 KGTTTTBGGGGGTTTTGTVKTKTHDGKTGBTGCCCTTYBYCCKGSGGTTGKYCYYCCCYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGCCTTACTTGATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           688 GGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTTGGGAACGCTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (fruit fly)
Drosophila melanogaster
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1039;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
3.4%; Score 40.6; D
Best Local Similarity 30.6%; Pred. No. 1.7;
Matches 57; Conservative 54; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fly), genomic survey sequence. AL106730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BH209707
Sml-41P23.TF Sml Schistc
genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AL106730.1 GI:5623541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KTKKGG 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      808 GCTGGG 813
                                                                                                                      TTTTGTGAA
                                                                                                                                                                                            CKKGSKKKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pBeloBAC11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1009
                                                                                                                      901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
BH209707/c
                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                      RESULT 12
CNS016GW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                             유
                                                                                                                      ò
                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/wol_type="mRNA"
/wol_type="mRNA"
/dolon=sourcessure for the same for the sapiens and for the same for the sapiens and for the same for the sapiens and for the same for the sa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 22-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
808 SAMCCCCMHRKCKSCYCWNARDAGADMYSBCBKTATBABKTKTRWKGKSGTAMCKCCCCMYK 867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGTTGGCGTGGGGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAA 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                380 KKSSTSASGSKTGSSKKKAKKSSKKKKSAKKGGSKKGSKKGSKKGSGSKKGGOSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGCKTGCKKGCKKGCKKKKSKGCKTGCGCKKKGCTSTTSTTSKKSKKKSGSKKGS 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BX462111
BX462111 Homo sapiens B CELLS (RAMOS CELL LINE) Homo sapiens CDNA clone CSODG001XP07 5-PRIME, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryofa, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
1 (bases 1 to 849)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Bmail: seqrefégenoscope.cns.fr, Web : www.genoscope.cns.fr
Library was constructed by Life Technologies, a division of:
Invitrogen. This sequence belongs to sequence cluster 9966.f For more information about this cluster, see
http://www.genoscope.cns.fr/
cgi-bin/cluster.cgi?seq=cSobG001CH04QP1&cluster=9966.f. Contact :
Feng Liang Email : fliang@lifetech.com/URL :
http://fulllength.invitrogen.com/ InvitroGen Corporation 1600
Faraday Avenue Genoscope sequence ID : CSObG001CH04QP1.
                                                                                                              543 ACCGGGAGIICAICAIGACCIIAGAAIGGIGGIITIGCCIACCIGCIGACAICGAICAITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTATCCGGCCGGTGGCGTCTATTGCTGGGCTTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGGCAGGCGCGCGCTTACTTGACTTGGCTGGGAATCCAGCAGTGGCGCCGCCGCTGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      841 AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             500 maigaracmanaccaschmacmaschmaccanamacascascascamanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.4%; Score 41; DB 13; Length 849; 21.3%; Pred. No. 1.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches 110; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Li.W.B., Gruber,C., Jessee,J. and Polayes,D. Full-length CDNA libraries and normalization Unpublished (2001)
Contact: Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BX462111
BX462111.1 GI:31029391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                 603 T 603
                                                                                                                                                                                                                                                                                                                                           868 T 868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
BX462111/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
```

ö

Gaps

ò

셤 ò g ò

ઠે g ω

Page

```
organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic DNA/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <1. . . >990
/gene="GPR7"
/locus_tag="HCM0935"
                                                                                                                                                                                                                    Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                AY401573.1 GI:39757562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BX416727.1 GI:30765629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 112; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14671302
                                                                                                                                                                                                     GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
   RESULT 14
AY401573
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                               KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
BX416727
                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /// Mol_type="genomic DNA" |
// Mol_type="genomic DNA" |
// Ab zers="learon (8183" |
/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             993 ATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCA 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1053 CCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCCTGAATA 1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1113 AGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCGT 1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             933 TGTTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAACAGCCGCAACTGATGCAGT 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 352 rearccrecrerrecrecrecrecrecresresrecrecrecrecrecresresresres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Use of end sequences from Schistosoma mansoni (Puerto Rico strain)
Sml BAC library for gene discovery and map construction
Unpublished (2001)
Contact: Najib M El-Sayed
Department of Bukaryotic Genomics
The Institute for Genomic Research
712 Medical Center Dr., Rockville, MD 20850, USA
Tel: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              172 AGATTTTGGACATGATGTGTTTTGTGACGATGATGATGTAGCTGATGAAGATAA 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: nelsayed@tigr.org
Clones are derived from the Schistosoma mansoni (Fuerto Rico) Sml
Clones are derived from the Schistosoma mansoni (Fuerto Rico)
ENC library. For clone availability, please contact Dr. Najib
El-Sayed at TIGR (nelsayed@tigr.org) or Dr. Phillip LoVerde at
State University of New York, Buffalo, New York, USA
(loverd@obuffalo.edu)
Seg primer: N13 For
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              292 recrecrecrecrecrecreargareargareargareargargargargargarga
                                                      GSS.
Schistosoma mansoni
Schistosoma mansoni
Eukaryota, Metazoa, Platyhelminthes; Trematoda, Digenea,
Strigeidida, Schistosomatoidea, Schistosomatidae, Schistosoma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                          Shetty, J., Simpson, A., Malek, J., Koo, H., LoVerde, P.T. and El-Sayed, N.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.3%; Score 39.8; DB 28;
llarity 46.8%; Pred. No. 1.9;
Conservative 0; Mismatches 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1. .475
/organism="Schistosoma mansoni"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1173 GAAAATAATGTCGGATGCGGCGTAAA 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               112 GGGATATGATGAGTTATGTGAGAATAA 86
                              3H209707.1 GI:16388592
                                                                                                                                                                                                  (bases 1 to 475)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S:
Matches 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                 SOURCE
ORGANISM
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                       JOURNAL
COMMENT
                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
```

```
Mus musculus GPR7 gene, VIRTUAL TRANSCRIPT, partial sequence, AX401573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BX416727 Thomo sapiens NEUROBLASTOMA Homo sapiens CDNA clone ESSDA011X114 5-PRIME, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 90).

Clark, A.G. Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Rerifara, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. White, T.J., Sninsky, J.J., Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Clark. A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark. A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Adams, M.D. and Cargill, M. Boriect Submission

Direct Submission

Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA

This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                337 crearrighadecercidaceagnacacertricreragecercare credecercar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 640 GACCACCTCGCTCAACCACGGTTATCCGGCCGTGGGCGTCTATTGCTGGGCTTTCAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 700 GACTGGCGATTCATATTGTGCTGGTTTGGGGTTGGGACGCTATTTTCCCGGCTCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                580 CTACCTGCTGACATCGATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dagogocogacoganacongeneganicadocacados agamentos dos astronos de as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          456 CACTTACGGTGCAGCGCGTGCTGTCAGTCTGGCGGTGTGGGCGCTGGTGACGCTGGTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3.3%; Score 39.8; DB 29;
52.1%; Pred. No. 2.9;
iive 0; Mismatches 102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGG 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ecrecerriecedrarreseredecredadade 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Science 302 (5652), 1960-1963 (2003)
```

```
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

[1] (Dases I to 712)
[2] Li, W.B., Gruber, C., Jessee, J. and Polayes, D.
[3] Full-length cDNA libraries and normalization
[4] Unpublished (2001)
[5] Contact: Genoscope
[6] Contact: Genoscope - Centre National de Sequencage
[7] BP 191 006 ENRY cedex - France
[8] PP 191 1006 ENRY cedex - France
[8] Email: seqrefégenoscope.cns.fr, Web: www.genoscope.cns.fr
[1] Library was constructed by Life Technologies, a division of
[8] Invitrogen. Contact: Peng Liang Email: fliang@lifetech.com URL:
[8] Faraday Avenue Genoscope sequence ID: CSODA011BE07QP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="NEUROBLASTOMA"
/clone_lib="Homo sapiens NEUROBLASTOMA"
/clone_lib="Homo sapiens NEUROBLASTOMA"
/note="Vector: PCMVSPORT_6; lst strand cDNA was primed
with a NotI-oligo(dT) primer. Five prime end enriched,
with a NotI-oligo(dT) primer. Five prime end enriched,
double-strand cDNA was digested with Not I and cloned into
the Not I and BCRNY sites of the pCMVSPORT 6 vector.
Library was not normalized."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .712
/organism="Homo sapiens"
/mol_type="mRNA"
/db xref="taxon:9666"
/clone="CSODA011X114"
                                    REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
```

g

8 8 8

8 8 8

899 GTTTTTGTG 907 :::::::: 687 KKKKKKK 695 Search completed: March 28, 2004, 18:21:15 Job time : 3830.91 secs

OW nucleic - nucleic search, using sw model

Run on: March 28, 2004, 14:04:19; Saarch time 2572,03 Seconds

Run on: March 28, 2004, 14:04:19; Saarch time 2572,03 Seconds

Fullis: UB-09-847-392-1\_COPY\_557\_1771

Perfect socre 615

Scoring table: 10BTTTTY\_NUC

Spartched: Gappy 10.0, Gappert 1.0

Gappy 10.0, Gappert 1.0

MAX.imum DB seq length: 0

MAX.imum DB seq length: 0

MAX.imum DB seq length: 0

MAX.imum March 100\*

MAX.imum DB seq length: 0

MAX.imum March 100\*

MAX.imum March 100\*

MAX.imum DB seq length: 0

MAX.imum March 100\*

MAX.imum March 100\*

MAX.imum DB seq length: 0

MAX.imum March 100\*

MAX.imum DB seq length: 0

MAX.imum DB seq length: 0

MAX.imum March 100\*

MAX.imum DB seq length: 0

MAX.imum March 100\*

MAX.imum DB seq length: 0

MAX.imum March 100\*

MAX.imum Ma

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description			ALG. Z. V SAIMONELL ARO16845 SAIMONELL AR384166 Sequence AE008884 SAIMONELL AE033324 SAIMONELL AC020874 Mus muscu AE013640 Yersinia AJ414159 Yersinia AJ414159 Yersinia AJ620885 Mus muscu AR352166 Sequence AC020883 Mus muscu AC016129 Drosophil AE016800 Vibrio vu AR016801 Vibrio vu AR016801 Vibrio vu	AB004104 Vibrio ch AB105408 Photobact AB004937 Pseudomon Continuation (3 of AB016856 Pseudomon AB016774 Pseudomon AB016774 Pseudomon BX640452 Bordetell BX640411 Bordetell BX640411 Bordetell AR318227 Sequence AP003001 Mesorhizo AC101459 Mes muscu AP002995 Mesorhizo AE005614 Escherich BX572597 Rhodopseu AB009276 Agrobacte	linear. PAT 17-DEC-2001 10vna., lentinovna. and bacterium escherichia coli
QI	1			AE004104 AE004937 AE016937 AC074221_2 AE016856 AE016856 BX640436 BX640452 BX640452 BX640452 BX640452 BX640452 BX640452 BX640452 BX640452 AE005044 AE005614 AE005614 AE005614 AE005614 AE005076 AE009276 ALIGNMENTS	1200 bp DNA US 6303348. 2 ., Zakataeva, N. Pav h., Balareova, A. Vč
	100.00 100.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00 1000.00	96.7 11509 93.9 10253 93.9 20976 92.9 318703 92.1 301566 90.0 10592 75.9 212936 73.1 256373 67.7 250050	61.7 29991 61.0 645 60.9 21692 60.9 21692 60.9 266383 44.7 19957 44.7 19957 44.7 19957 29.7 6224 29.7 26274 27.7 26274 27.7 26274 27.7 26274 27.7 26274 27.7 26274 27.7 26274	40844444444444444444444444444444444444	AR172781 Sequence 1 from patent U AR172781 AR172781.1 GI:17912272 Unknown. Unclassified. I (bases 1 to 1200) Ilivshits, V. Arkadievich., Aleoshin, V. Venyamiovich, Tokhmakova, I. Livovna. DNA coding for protein w
Si.	1 1 1 1 1 1	0 0 0 0 0 1 0 8 4 8 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	30 149.8 32 1123.6 33 109.4 34 109.4 36 11.2 36 11.6 37 109.4 38 10.6 39 75.4 61.7 61.8 61.8 61.8 61.8 61.8 61.8 61.8 61.8	RESULT 1 LOCATION AND AND AND AND AND AND AND AND AND AN

us-09-847-392-1\_copy\_557\_1171.rge

(1

Becherichia coli and process for AJNOMOTO CO INC     COMMENT	ZAKAÑBVA,  PI VLADIMIR VENIYAMINOVICHI ARN  PI IRINA RIVOVUNA TOKUMAKOVA  PC C12N15/09,C07K14/245,C12N1//  PC C12R1:19),	FEATURES  source  /mol_type="genomic DNA"	ORIGIN  Query Match  Best Local Similarity 100.0%; Pred. No.  Matches 615, Conservative 0; Mismatch	Qy 1 ATGACCTTAGAATGGTGGTTTGCCTACTG		Db 677 GICIAFIGCIGGGCTTCAGACCGGACTGGCC Qy 181 GGGACGCTATTTTCCCGCTCAGTGATTGCG	241	301	361	421	OY 481 ATGATCGGATAGCGACCCTTGCTCAACGG DD 1037 ATGATCGGTTACGCCACCCTTGCTCAACGG OV 541 ATGAAGCGCTGATAAGATTATCGGCTCG	Н	Qy 601 TCGGCGAGGCATGCG 615 
sistance to L-homoser tent: US 630348-A 1 Location/Quali 11200 /organism="unk /mol_type="una	<pre>Best Local Similarity 100.0%; Pred. No. 1.9e-185; Matches 615; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Qy</pre>	12 67 18	0 / / 181 737 241		DD 857 CIGGCULTATICACICACICGACAITIGITCCAGGCGCAGTITITGIGAALCICACC 916  QY 361 AATCCCAAAAGTATTGTGTTTTTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAG 420  DD 917 AATCCCAAAAGTATTGTGTGTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAACAG 976	OY 421 CCGCAACTGATGATATATGGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTG 480	OY 481 ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG 540  1037 ATGATCGGTTACGCCACCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG 1096	Oy 541 AIGAAGCGCIGAATAAGATTTTCGGCTGTTGTTTATGCTGGGGGGGGGCGCTGTTAGCA 600 Db 1097 AIGAAGGCGCTGAATAAGATTTTCGGCTGGTTGTTTATGCTGGGGGGGG	Qy 601 TCGGCGAGGCATGCG 615	RESULT 2 E41573 LOCUS E41573 1-JAN-2002 DEFINITION DNA encoding protein imparting tolerance against L-homoserine to	ACCESSION E41573.1 GI:18627533 VERSION E41573.1 GI:18627533 KEYWORDS JP 2000116399-A/1. SOURCE Bacherichia coli	ORGANISM Escherichia coli Decteria: Proteobacteria; Gammaproteobacteria; Enterobacteriales;	REFERENCE INCREMENTATION OF THE STREET OF TH

```
CGTCACCACTATTGTGGTCGATATTGTGTG 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATTGCTCTATGATTAAAGGACCAAAGCAG 540
                                                                                                                                                                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CETTGITTIAIGCIGGGGGGGCGCTGITAGCA 600
                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                   GITTGAAGTGTTGAAGTGGGCAGGCGCGCT 240
                                                                                                                                                                                                                                                                                                       GCTGACATCGATCATTTAACGCTGTCGCCA 60
                                                                                                                                                                                                                                                                                                                                                                       676
                                                                                                                                                                                                                                                                                                                                                                                          CGATTCAIATTGTGCTGGTTGCGTGGGGGTT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GOGGGCCGCTGGTGCAATTGACCTTAAATCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTCCAGCGCGCAGTTTTTGTGAATCTCACC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTATTTCCGCAATTCATCATGCCGCAACAG 420
                                                                                                                         /21,C12P13/06,C12P13/08//(C12N1/21,
                                                                                                       RYOSHIN, ARA VALENTINOVUNA BERARYO,
                                                                                                                                                                                                                                                                                                                                                 CTCGCTCAACCACGTTATCCGGCCGGTGGC
                                                                                                                                                                                                                                                                5; DB 6; Length 1200;
, 1.9e-185;
.ches 0; Indels 0; Gaps
                                                                        !5
HITTSU,NATARIYA PAVUROVUNA
or producing L-amino acid PR-2000;
                                                                                                                                                                    Qualifiers
1171).
                                                                                                                                                                                                       a coli"
\"
```

540

```
/transI_table=11
/protein_id="CAC09318.1"
/brotein_id="CAC09318.1"
/db_xref="GI:10190393"
/db_xref="REMPERMBL:CAC09318"
/db_xref="REMPERMBL:CAC09318"
/translation="MTLEWMFAXILTSILITLSPGSGAINTMTTSINHGYPAGGVYCW
ASDRYCOBYCOGWROWGTLESRSVIAFBEVLKMAGAAYLIMLGIQOWRAAGAIDLKSIA
ATGGRHALPORAVEWIATNEKSILYELAALPPOPINPCQPOLMGYIVLGVTTIVVDIIV
MIGYATLAQRIALMIKGPRQMKALNKIFGSLFMLVGALLASARHA"
                                                                                                                                                                                  1037 ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG 1096
                                                                                                977 ccecaactearccaetatatcerecreecercaccactatreregecaratratrere 1036
                                                                                                                                                                                                                                                                                        1097 ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCA 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PAT 16-SEP-2000
917 AATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGATGCCGCAACAG 976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Escherichia coli
Sacharichia coli
Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Belareva, A.V., Aleshin, V.V., Livshits, V.A., Tokhmakova, I.L. and Zakataeva, N.P. Gene and method for producing 1-amino acids Patent: EP 1013765-A 1 28-JUN-2000; AJINOMOTO KK (JP)
                                                                                                                                                                                                                                                       541 ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCA
                                                    421 CCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTG
                                                                                                                                                    481 ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        677 Grenarigerieggerineagaecegaeriegegarinearariarigeriegriegeregegeri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGTGGAGGCGCGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           557 Argacciragaargergerineceracergacarcarcarerrinaacergreea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTTGGCGTGGGGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ATGACCTTAGAATGGTGGTTTGCCTACCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 615; DB 6; Length 1
100.0%; Pred. No. 1.9e-185;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Escherichia coli"
/mol_type="unassigned DNA"
/db_taxcon:562"
557_.1174
/note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AX030175 1231 bp
Sequence 1 from Patent EP1013765.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX030175.1 GI:10190392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                           1157 TCGGCGAGGCATGCG 1171
                                                                                                                                                                                                                                                                                                                                                          601 TCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 615; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 4
AX030175
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                 à
                                                                                       ద
                                                                                                                                      ò
                                                                                                                                                                                          ద
                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                            \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                      Bacteria, Proteobacteria; Gammaproteobacteria, Enterobacteriales;
Enterobacteriaceae, Escherichia.

Enterobacteriaceae, Escherichia.

Enterobacteriaceae, Escherichia.

Enterobacteriaceae, Escherichia.

Externaturu.V.A., Zakataeva,N.P., Aryoshin,V.V., Beraryo,A.V. and Tokumakova,I.R.

Novel gene and process for producing amino acid

AJINOMOTO CO INC

SECHERICHIA CONSTANTA

AJINOMOTO CO INC

SECHERICHIA CONSTANTA

Process for producing amino acid

AJINOMOTO CO INC

SECHERICHIA CONSTANTA

Process for producing amino acid

AJINOMOTO CO INC

SECHERICHIA CONSTANTA

Process for producing amino acid

AJINOMOTO CO INC

SECHERICHIA CONSTANTA

Process for producing amino acid

AJINOMOTO CO INC

SECHERICHIA CONSTANTA

Process for producing amino acid

AJINOMOTO CO INC

SECHERICHIA CONSTANTA

Process for producing amino acid

AJINOMOTO CO INC

SECHERICHIA CONSTANTA

Process for producing amino acid

AJINOMOTO CO INC

SECHERICHIA CONTRIBUTION

PROCESS for STANTA

PROCESS for STANTA

PROCESS for STANTA

PROCESS for CI2PI3/06, CI2PI3/06, CI2PI3/08, CI2PI3/06, CI2PI3/
                                                                            PAT 31-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACTIGATITIGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATIGACCTTAAATCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         677 GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGTGGTTGGCGTTTGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 797 TACTIGAITITGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGGCAATIGACCTTAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATCCCAAAAGTATTGTGTGTTTCTGGCGGCGTATTTCCGCAATTCATCATCATGCCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               crescercracicaaresegresacarrierrecasesesegrarrirersaarereae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTTGAAGTGGGCAGGCGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    737 GGGACGCTATTTTCCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGCCAGGCGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.0%; Pred. No. 1.9e-185;
Matches 615; Conservative 0; Mismatches 0; Indels 0
                                                            248927 1231 bp DNA linear Novel gene and process for producing amino acid. E48927

    1231
    /organism="Bscherichia coli"
/mol_type="genomic DNA"
    /db_xref="taxon:562"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (557), . (1171)
Location/Qualifiers
                                                                                                                                                 E48927.1 GI:18627996
JP 2000189177-A/1.
Escherichia coli
Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                   RESULT 3
E48927
LOCESTINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

ö

Gaps

919

676 180 736

196

240

```
On May 29, 1995 this sequence version replaced gi:148169. This sequence was determined as part of the B. coli Genome Project (Frederick R. Blattner, director) at the University of Wisconsin-Madison. The entire sequence was independently determined from E. coli MG1665. Overlaps and conflicts with other sequence determinations are annotated. Reference [1] describes the original sequence determination of a 91408 bp sequence. References [2], [3], sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAA67566.1"
/db_xref="GI:148170"
/db_xref="GI:148170"
/tb_xref="GI:148170"
/tb_x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /sub_gtrain="MQ1655"
/db_xref="taxon:562"
/db_xref="taxon:562"
/map="bp_1 at 3974 kb; 84.7 minutes"
/clone lib="lambda library of Daniels and Blattner"
/clone lib="lambda library of Daniels and Blattner"
/note="This sequence comprises the following lambda
clones: DD850(EC15-116), DD851(EC13RM4), DD854(EC15-177),
DD861(EC17-211), DD864(EC27-149), DD865(EC21-76),
DD867(EC27-860). M13mp19 or Janus vectors were used for
Submitted (12-FBB-1992) Donna L. Daniels, Laboratory of Genetics,
University of Wisconsin, 445 Henry Mall, Madison, WI 53706, USA.
Email: ecoli@genetics.wisc.edu, Phone: 608-262-2534; Fax:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="CGSC No. 18010; possible pssR gene"
/codon start=1
/transl_table=11
/protein_id="AAA67567.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="corresponds to V00349 (164. .500)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (1. .4900)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253. .396
/note="predicted bend of 81 degrees"
complement(266. .862)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77 degrees"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ξ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      177. .205
/note="terminator-like sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . .200
note="corresponds to K02846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .91414
/organism="Escherichia coli"
/mol_type="genomic DNA"
/strain="K-12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'note="corresponds to M37337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    586. .724
/note="predicted bend of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l. .5863
'note="clone EC15-116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (703. .1104)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (703. .1104)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement-(266 ... 862)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /Function="unknown"
/codon_start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95. .170
/gene="trpT"
/note="CGSC No. 66"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="CGSC No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene="trpT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      subcloning."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="f198"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="f133"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="f133"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="aspT'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene="aspT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               trna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           trna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Enterobacteriaceae; Escherichia.
1 (bases 1 to 91414)
Daniels,D.L., Plunkett,G. III, Burland,V. and Blattner,F.R.
Analysis of the Escherichia coli genome: DNA sequence of the region
from 84.5 to 86.5 minutes
Science 257 (5071), 771-778 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ECOUW85

91414 bp DNA linear BCT 29-MAY-1995
E. coli genomic sequence of the region from 84.5 to 86.5 minutes.
M87049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGGTCGATATTATTGTG 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1097 ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCA 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                      TACTIGNITITION TO THE TOTAL TOT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCA 600
                                                                                                                                                                                                            CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACC 360
                                                                                                                                                                                                                                                                                    credecercracrearedegrearentrightecadedegedeartringaarereace 916
                                                                                                                                                                                                                                                                                                                                                                     AATCCCAAAAGTATTGTGTGTTTCTGGCGGCGCTATTTCCGCCAATTCATGATGCCGCAACAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                             917 AATCCCAAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAACAG 976
                                                   TACTTGATTTGGCTGGGAATCCAGCAGTGGGGGGCGCCGCTGGTGCAATTGACCTTAAATCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [ (bases 1 to 91414)
Plunkett, G. III, Burland, V., Daniels, D.L. and Blattner, F.R.
Analysis of the Escherichia coli genome. III. DNA sequence of the
region from 87.2 to 89.2 minutes
Nucleic Acids Res. 21 (15), 3391-3398 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 (bases 1 to 91414)
Rudd, K. E., Sofia, H.J., Koonin, E.V., Plunkett, G. III, Lazar, S. and
Rouviere, P.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Argarcegranaceccarcerrangearrangearrangearrangearceanged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Analysis of the Escherichia coli genome. IV. DNA sequence of region from 89.2 to 92.8 minutes
Nucleic Acids Res. 21 (23), 5408-5417 (1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 (bases 1 to 91414)
Blattner, F. R., Burland, V., Plunkett, G. III, Sofia, H.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A new family of peptidyl-prolyl isomerases
Frends Biochem. Sci. 20 (1), 12-14 (1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1157 redeceaedecarece 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5 (bases 1 to 91414)
Daniels, D.L.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    M87049.1 GI:836656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Escherichia coli
Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Daniels, D.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95184296
7878731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8346018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1037
                                                                                                                               797
                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                        857
                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
ECOUM85/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
```

S

```
62042
                                                                                                                                                                                                                                                                                                                                                                                                              62102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61862
                         /protein_ba_natisti.i"

/db xref="01:148175"
/db xref="01:148175"
/t anslation="MNGAGWWVHALRAQGWNTVFGYPGGAIMPVYDALYDGGWEHLLC
RHEQGABMAAIGYARATGKTGWCIAFSGFPGANNLITGLADALLDSIPVVAITGQWSAP
FIGTDAFGEWDVLGISLACTKHSFLVQSLEELPRINAEAFDVACSGRFPGPVLVDIPKD
FIGARSQHEWFTTVBRIEVXFPHARVEQARQMLAKAQKPMLYWGGGWGMAQAVPALRE
FLAARTWRATCTLIGGAGAARDPYYLGMLGGHGTKAANFAVORCDLLIAVGARFDDR
VTGKLNTFAPHASVIHMDIDPAEMNKLRQAHVALQGDLNALLPALQQDLNQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61801 CAATCCCAAAAGTATTGTGTTTTCTGGCGGCGTATTTCCGCAATTCATCATGCCGCAACA 61742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61861 GCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGTGAATCTCAC 61802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51621 GATGAAĞĞCĞCTĞAATAAĞATTTTCĞĞCTCĞTTĞTTTATĞCTĞĞTĞĞAĞCĞCTĞTTAĞC 61562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AE000458 11509 bp DNA linear BCT 01-DEC-2000 Escherichia coli K12 MG1655 section 348 of 400 of the complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   299
                                                                                                                                                                                                                                                                                                                                                                                                                                                       GOCTICTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATC-CGGCCGGTGG 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300 GCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCAC 359
        large subunit'
                                                                                                                                                                                                                                                                                                                                                                                                   61981 TGGGACGCTATTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGAGGCGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61921 TTACTIGATTIGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480 GATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGGA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62101 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCSCGGCCGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                       1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62041 Cercratracresscritcasaccesacrescearreararrarscressrisses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAATCCCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420 GCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61741 GCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61681 GATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540 GATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTTGTTAGC
                                                                                                                                                                                                                                                                                                                                ij
                                                                                                                                                                                                                                                                                       Length 91414;
                                                                                                                                                                                                                                                                                                                                0; Indels
        product≠"acetohydroxy acid synthase_
                                                                                                                                                                                                                                                                                       Score 604; DB 1; I
Pred. No. 1.3e-181;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61561 ATCGCCGAGCCATGCG 61546
                                                                                                                                                                                    4675. .5340
/gene="o221"
4675. .5340
/gene="o221"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genome.
AE000458 U00096
AE000458.1 GI:2367299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600 ATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                         98.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Escherichia coli K12
Escherichia coli K12
                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 615; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 6
AE000458/c
LOCUS
DEFINITION
                                                                                                                                                                                         gene
                                                                                                                                                                                                                               SOO
                                                                                                                                                                                                                                                                                                                                                                         ģ
                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            જે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_grart=1
/rrans]_table=11
/protein_id="AAA67569.1"
/protein_id="AAA67569.1"
/protein_id="AAA67569.1"
/db_xref="G1:148173"
/rranslation="MHINVTQGGLMSLSIVHTRAALGVNAPPITVEVHISKGLPGLTM
/rranslation="MHINVTQGGLMSLSIVHTRAALGVNAPPITVEVHISKGLPGLTM
/rranslation="MHINVTQGGLMSLSIVHTRAALGVNAPPITVEVHISKGLPGLTM
/rranslation="MHINVTQGGLMSLSIVHTRAALGVNAPPITVEVHISKGLPGLLTM
/rranslation="MHINVTQGGLMSLTGALFAKKTINLAPALGGRYPLPAGLTAHLGPQGTGKTWAASRTAARTYPAVGRALETAAN
GGGGLIADHLGAYCAFLBGRAHLENEVRETATAARSAALLSLVNARSVOKKWRQRPF
GGHNLLLIGPPGTGKTWAASRTUGLLPDLSNEEAALSSAALLSLVNARSVOKKWRQRPF
RPPHSASLTAMVGGGAIPGPGESAATVGKNRKTPEPGTLRRTLDALREPISGQIH
LSRTRAKTTYPAGSCSSAATVGKNRKARPERGFKRQNKLNAMLDSPBIRGFCKLE
SEIPPPPGILSKTVVGSCSAATVGKNARARDREPISRPLIS
LEIPPPGGTSTTVHGVLKVARTIADIDQSDIITRQHLQZAVSYRAIDELL
                                                                                                                                                                                                                                                                                              /protein_id="1AA67568.1"
/protein_id="AA67568.1"
/db_xref="G1:1A172"
/translation="WAESFTTTNRYFDNKHYPRGFSRHGDFTIKEAQLLERHGYAFNE
LDIGKREPVTEEEKLFVAVCRGEREPVTEAERVWSKYMTRIKRPKRFHTLGAVNRRLK
VLKTTPILTINKKGEMPFFYVSSFCRWMSKRSIAR"
/db_xref="G1:148171"
/translation="MDTELLKTFLEVSRTRHFGRAAESLYLTQSAVSFRIRQLENQLG
VNLFTRHRNNIKLTAAGEKLLPYAETIMSTWQAARKRWRIPHDITSFLSVPAPRCGNV
CLISGWDAGCKTRRPIQAYSSKRELPNGSLW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       K12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chelatase subunit of Rhodobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ranslation="MTALLRVISLVVISVVVIIIPPCGAALGRGKA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1696. .4679
gene="ilvg"
note="CGSC No. 603; inactive in wild-type E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (1. .9456)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .341)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IHLOKLLT"

3287. .3433

Note="predicted bend of 79 degrees"
3287. .3326

/note="promoter matrix score of 74"
3336. .12791

/note="corresponds to M10313 (1. .9456)
3336. .3737

/note="corresponds to V00289 (1. .402)"
3336. .3376

/note="corresponds to M11651 (1. .341)"
3379. .5721

/note="v00290; ECILVX(1. .2343)"
                                                                                                       'note="promoter matrix score of 63"
                                                                                                                                              57
                                                                                                                        1151. 1179
/hote="pyromoter matrix score of
1223. 1636
/gene="0137"
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="terminator-like sequence"
complement(1585. .3135)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (1585--.3135)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           function="unknown"
/note="similar to Mg c
                                                                                                                                                                                                                                              function="unknown"
/codon start=1
/transl_table=11
                                                                                 complement (1136.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                458. 3556
gene="ilvL"
                                                                                                                                                                                                                                                                                                                                                                                                         1562. .1586
/gene="o137"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'gene="f516"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      696. .4679
gene="ilvG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                            terminator
                                                                                   promoter
                                                                                                                        promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          promoter
                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
```

```
/translation="MRTLQGWLLPVFMLPMAVYAQBATVKEVHDAPAVRGSIIANMLQ
EHDNPFTLYPYDTMYLIYQTSDLMKEAIASYDMAENARKDBYKRODELGLAFPLWRGIL
GPNSVLGASYTQKSWWQLSNSESSPPRETNYEPQLFLGFATDYRFAGWTLRDVEMGY
NHDSNGRADPTSRAWMLLYFLAMAENGNWLVBVKPWYVGNTDDNPDITKYMGYYQLK
IGYHLGDAVLSAKGQYNWNTGYGGAELGLSYPITKHVRLYTGVYSGYGESLIDYNFNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
/product="ATP-dependent DNA helicase"
/product="ATP-dependent DNA helicase"
/product="ATP-dependent DNA helicase"
/protein_id="ADAC76825.1"
/db_xref="G1:2367301"
/db_xref="G1:236730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAEAMLEYDPADMÄMLRRCLBEKFOGGOLQDIERHKLINAMGAFAEAQTÖRRLVLLNYFG
SRAGDEGGNOTOLDPPROYDGSTDAGJALGTIGRNYQRFRGNYVVEYTRGANNORIR
DYGHDKLKYYGMGRDKSHEHWYVYTRQLIHJGLVTQNIAGHSALQLTBAARPYLAESS
LQLAVPRIVALKPKAMQKSFGGNYDRKLFAKLRKKRKSIADESNVPPYVVFNDATLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /cransT_table=11
/product="orf, hypothetical protein"
/protein_id="AAC76826.1"
/db_xref="di:236730"
/translation="MGYQMLRGALKKEAVSAPAPQVELAKSGRSFLKGLLTNLANPKA
/translation="MGYQMLRGALKKEAVSAPAPQVELAKSGRSFLKGLLTNLANPKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="0122; sequence change shortens and changesN-terminus relative to earlier version (YIGJ_ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="REP (repetitive extragenic palindromic) element; contains 1 REP sequence" complement(3654. .4070)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2104. .2140
/note="REP (repetitive extragenic palindromic) element;
contains 1 REP sequence"
    note="0289; 99 pct identical to PA1_ECOLI SW: P00631;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            965. .993

1019. 1047

1019. 1047

1017. .2909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1162. .1189
/note="factor Sigma70; predicted +1 start at 4005588"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="0610; 99 pct identical to 607 amino acids of RECQ ECOLI SW: P15043 but has 3 additional N-ter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1077. .2909
/gene="recq"
*EC number="3.6.1.-"
/function="enzyme; DNA - replication, repair,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAEQMPITASEMLSVNGVGMRKLERFGKPFMALIRAHVDGDDEE"
                                                                                                                              restriction/modification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                224. .3592
gene="YigJ"
function="orf; Unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="yigK"
/note="synonym: b3824"
complement(3654. ,4070)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="synonym: b3822"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="synonym: b3823"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDGFAGALFAGFGIHLIISR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRVGVGVMLNDLF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene="yigJ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene="recQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AL Direct Submission

AL Direct Submission

Direct Submission

AL Submitted (13-07-1998) Laboratory of Genetics, University of Submitted (13-07-1998) Laboratory of Genetics, University of Wisconsin, 445 Henry Mall, Madison, WI 53766, USA

On Sep 9, 1997 this sequence version replaced gi:1790254.

This sequence was determined by the B. Coli Genome Project at the University of Wisconsin-Madison (Frederick R. Blattner, director). Supported by NIH grants HG00301 and HG01428 (from the Human Genome Project and NCHER). The entire sequence was independently determined from E. coli K12 Servain MG1655. Predicted open reading frames were determined using GeneMark software, kindly supplied by Mark Borodovsky, Georgia Institute of Technology, Allanta, GA, 30332 [e-mail: mark@amber.gatech.edu]. Open reading frames that have been correlated with genetic loci are being annotated with CG Site Nos., unique ID nos. for the genes in the E. coli Genetic stock Center (CGSC) database at Yale University, kindly supplied by Mary Berlyn. A public version of the database is accessible (http://dgsc.biology.yale.edu). Annotation of the genome is an ongoing task whose goal is to make the genome sequence more useful by correlating it with other data. Comments to the authors are appreciated. Updated information will be available at the E. coli Genome Project's Mortl Wide Web site

(http://www.genetics.wisc.edu). *** The E. coli K12 sequence and its annotations are periodically updated; this is version M54. No sequence changes. Annotation updates: updated gene identifications and products; all new functional assignments courtesy of Monica Riley; added promoters, protein binding sites, and repeated sequences described in reference 1. The unique numeric identifiers befored and promoters be assignments decomes escribed in reference 1. The unique mumeric identifiers beforedined and service of the acceptance of an account of the a
                                    Enterobacteriaceae; Escherichia.

1 (bases 1 to 11509)

Battner, F.R., Plunkett, G. III, Bloch, C.A., Perna, N.T., Burland, V., Riley, M., Collado-Vides, J., Glasner, J.D., Rode, C.K., Mayhew, G.F., Gregor, J., Davis, N.W., Kirkpatrick, H.A., Goeden, M.A., Rose, D.J., Mau, B. and Shao, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNA-encoding) are now designated as gene synonyms instead of labels. This should allow them to be searched for in Entrez as gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (02-25P-1997) Guy Plunkett III, Laboratory of Genetics, University of Wisconsin, 445 Henry Mall, Madison, WI 53706, USA. Email: ecoli@genetics.wisc.edu Phone: 608-262-2534 Fax:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (16-JAN-1997) Guy Plunkett III, Laboratory of Genetics,
University of Wisconsin, 445 Henry Mall, Madison, WI 53706, USA.
Email: ecoli@genetics.wisc.edu Phone: 608-262-2534 Fax:
3acteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /function="enzyme; Central intermediary metabolism:
Phosphorus compounds"
                                                                                                                                                                                                                                                                                           The complete genome sequence of Escherichia coli K-12 Science 277 (5331), 1453-1474 (1997)

    11509
/organism="Escherichia coli K12"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="genomic DNA"
/strain="K12"
/sub_strain="MG1655"
/db_xref="taxon:8333"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'note="synonym: b3821"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EC_number="3.1.1.32"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'gene="pldA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene="plda"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 11509)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to 11509)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 11509)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Blattner, F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          508-263-7459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                              9278503
                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                              AUTHORS
```

COMMENT

CDS

FEATURES

```
Shigella flexneri 2a str. 301
Shigella flexneri 2a str. 301
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae, Shigella.
1 (bases 1 to 10253)
July, Vaun, Z.H., Xu, J.G., Wang, Y., Shen, Y., Lu, W.C., Wang, J.H.,
Liu, H., Yang, J., Yang, F., Qu, D., Zhang, X.B., Zhang, J.Y., Yang, G.W.,
Wu, H.T., Dong, J., Sun, L.L., Xue, Y., Zhao, A.L., Gao, Y.S., Zhu, J.P.,
Kan, B., Chen, S.X., Yao, Z.J., He, B.K., Chen, R.S., Ma, D.L.,
Genome sequence of Shigella flexneri 2a: insights into
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 10253)
Jin,O., Shen,Y., Wang,J.H., Liu,H., Yang,J., Yang,F., Zhang,X.B.,
Zhang,J.Y., Yang,G.H., Wu,H.T., Dong,J., Sun,L.L., Xue,Y.,
Zhao,A.L., Gao,Y.S., Zhu,J.P., Chen,S.X., Yao,Z.J., Wang,Y.,
Div,W.C., Qiang,B.Q., Wen,Y.M. and Hou,Y.D.
Direct Submission
Submitted (08-MAY-2001) Microbial Genome Center of Chinese Ministry
of Public Health, 100 YingXin Jie, XuanMu Qu, Beijing 100052, P.R.
  3973 CGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCA 3914
                                                                                              3913 CCAATCCCAAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAAC 3854
                                                                                                                                                                     3853 AGCCGCAACTGATGCAGTATTATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTG 3794
                                                                                                                                                                                                                                            538
                                                                                                                                                                                                                                                                      3793 IGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGC 3734
                                                                                                                                                                                                                                                                                                                                                                      3733 AGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGAGCGCTGTTAG 3674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AB015396 10-202 10253 bp DNA linear BCT 18-OCT-2002 Shigella flexneri 2a str. 301 section 359 of 412 of the complete
                                                                                                                                                 478
                                                                                                                                                                                                                                                                                                                                        AGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAG 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="yigB"
/locus tag="SF3893"
/note="similar to Bscherichia coli K12 orf, conserved
hypothetical protein gi: 1790248 (162 aa). BLAST with
hypothetity of 99% in 641 aa. This CDS has been disrupted by
insertion. The sequence has been checked and is believed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genome sequence of Shigella flexneri 2a: insights into
pathogenicity through comparison with genomes of Escherichia coli
                                                                                                                                                                                                                                          TGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGC
                                                CCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAAC
                                                                                                                                              AGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. 10253
/organism="Shigella flexneri 2a str. 301"
/mol type="genomic DNA"
/strain="301"
/serotype="2a"
/db_xref="taxon:198214"
complemen(243, .2167)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       K12 and 0157
Nucleic Acids Res. 30 (20), 4432-4441 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (243. .2167)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /pseudo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3673 CATCGGCGAGGCATGCG 3657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AE015396 AE005674
AE015396.1 GI:24054379
                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCGGCGAGGCATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12384590
                                                359
                                                                                                                                              419
                                                                                                                                                                                                                                          479
                                                                                                                                                                                                                                                                                                                                        539
                                                                                                                                                                                                                                                                                                                                                                                                                                   599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 7
AE015396/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                            원 & 명
В
                                             δ
                                                                                                                                                                                                                     ⋧
                                                                                                                                                                                                                                                                           D
D
                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
            function="Orf; Unknown"

// function="Orf; Unknown"

// codon start=1

// transl_table=11

// product="orf; hypothetical protein"

// product="orf; hypothetical protein"

// product="orf; hypothetical protein"

// db_xref="d1:1790258"

// db_xref="d1:1790258"

// canslation="WIAPELKWAGAAYLIWIGIQOWRAAGAIDLKSLASTQSRRHLF

ORAVEVNLTHRKSINERALFPOFINEOQPCIMOXIVIGVTIIVVDIIVMIGYATLAO

RAAMIKGERQMKALNKIFGSLFMLVGALLASARHA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MFQQKDWETRENAFAAFTMGPLTDFWRQRDEAEFTGVDDIPVR
RYCPRAQHHRRVVYCPGRIESYVKAABLAYDLFHLGFDVLIDHRQGRSGRLLADP
HLGHVNRFNDYVDDLAAFWQBVQPGPRKRXILAHBKNGGALSTLFLQRHPGYCDAIA
LITAPKEGIVIRMPSYVARQLINWABAHPRRDYAAGTGRRRALPFAINVLTHSKQRY
RRNLRFYADDPTIRVGGPTYHWVRESILAGBCVLAGAGDDAFPTLLQAEBERVVDNR
MHDRFCELRTAAGHPVBGGRPLVIKGAYHEILFBKDAMASVALHAIVDFFNRHNSPSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4273 ATGACCTTAGAATGGTGGGTTTGCCTACCTGCTGACATCGATCATTTAAGCCTGTCGCCA 4214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAAT 3974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4153 GCGTCTATTGCTGGGCTTCAGACCGGACTGCGATTCATATTGTGCTGGTTGGCGTGGG 4094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTAT--CCGGCCGGTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTGTGAATCTCA 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                      4200. .4230
/note="factor Sigma70; predicted +1 start at 4006629"
complement (4227. .4254)
/note="factor Sigma70; predicted +1 start at 4006612"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /BC_number_13.1.1.5"
/function="enzyme; Central intermediary metabolism:
Phosphorus compounds"
/hore="0.340, 99 pcf identical-amino_acid_Bequence and
equal length to PLDB_ECOLI SW: P07000"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5426. .5455
/note="factor Sigma70; predicted +1 start at 4007854"
5438. .5466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTAGAGTGGGCAGGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5381. 5408
/note="factor Sigma70; predicted +1 start at 4007807"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5438. 5466

5404 = factor Sigma70; predicted +1 start at 4007865"

5404 - 5523

5706 = factor Sigma70; predicted +1 start at 4007922"

5526 - 6041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 11509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Codon_start=1

[trans] table=11

producE=1ysophospholipase L(2)"

protein_id="AAC76828.1"

db_xref="GI:2367303"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 595; DB 1; I
Pred. No. 7.2e-179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                  note="synonym: b3825"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96.7%;
98.9%;
                                                                                                                                                                                                                                                                                                                                                       1384. .5406
/gene="pldB"
                                                                                                                                                                                                                                                                                                                                                                                                                              1384. .5406
/gene="pldB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 98.9
Matches 610, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                           promoter
                                                                                                                                                                                                                                                                                                         promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  promoter
                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
```

임 상 임

6 6 6 6 6 6 6

ò

gene

gene

CDS

gene

gene

CDS

```
COLL CLOSIN, BLUESS FEI: NF_48U453.1"

COGON SEATC=1

(rans=1 table=11

/trans=1 table=11

/product="would be membrane phospholipase A"

/product="would be membrane phospholipase A"

/protein_id="AAN45334.1"

/db_xref="G1:4054386"

/trans=1ation="MRTLGWHLPWFMLPWAYAQEATVKEVHDAPAVRGSIIANMLQ

EHDNPFILYPYDTNYLIYTGTSDLNKEAIASYDMAENARKDEVRFQLSLAPPLMRGII

GPNSVLGARSTYGKSWWQLSNSEBSSPFREINYEPOLEIGRATDYRFAGWTLROVEMGY

MHDSNGRSDFTSRSWNRLYTRLMAENGNNLVBVXEWYVGSYDDNRPDITKYMGYYQLK

IGYHLGDAVLSAKGQYNWNTGYGGAELGLSYPITKHVRLYTQVYSGYGESLIDYNFNQ

TRYCVGYMINDLF"

18802

/Gene="recQ"

/coustage="FecQ"

/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gous tag="SF3898"
/locus tag="SF3898"
/note="Residues 1 to 161 of 161 are 100 pct identical to residues 1 to 161 of a 161 aa protein from Escherichia coli ol57:H7 ref: NP_312777.1"
/codon start=1
/transl_table=11
/protein_id="AAN46333.1"
/protein_id="AAN46333.1"
/db_xref="G1:24054385"
/translation="MKCKDDMSAUTAEQALKIVGEMFVYHMPFNRALGWELERYEKE FAQLAFUNGPMYOGNMGSILHGGYIASALDVAAGLVCVGSTLTHEHTISEDELRQEE FAQLAFUNGPMYOGNMGSILHGGYIASALDVAAGLVCVGSTLTHEHTISEDELRQEE FAQLAFUNDPNYORMAGSILHGGYIASALDVAAGLVCVGSTLTHEHTISEDELRQEE FAQLAFUNDPNYORMAGSILHAGYIASALDVAAGLVCVGSTLTHEHTISEDELRQEE
           /protein id="AAN45331.1"
/db_xref="G1:24054383"
/translation="MYESGHIAMLTGDSHKDVKFMLRNFIPTSNGKISRHRYIFLFIL
INFIRALIIFPNDGRAGFLVIVSTIALHYLVINMNCQRLRDSGFIYIKIYVFGTLAV
YIISIITMIABDFACSGNGSWIFLICYFSTFSMLMLAPTDSSKQ"
complement (4437)
/gene="rail"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5971. .6840
/gene="pldA"
/locus_tag="SF3899"
5971. .6840
/gene="pldA"
/locus_tag="SF3899"
/note="Residues 1 to 289 of 289 are 100 pct identical to
residues 1 to 289 of a 289 are 100 pct identical to
coli O157.H7 EDL933 ref: NP_290453.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /locus tag="SF3900"
/note="Residues 1 to 604 of 604 are 99 pct identical to
residues 8 to 611 of a 611 aa protein from Escherichia
coli O157:H7 EDL933 ref: NP_290454.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                   t
0
                                                                                                                                                                                                                                                                                                                                                                                        /locus tag="SF3897"
/note="Residues 1 to 296 of 296 are 99 pct identical
residues 1 to 296 of a 296 aa protein RARD_ECOLI sp:
                                                                                                                                                                                                                                                                      /locus_tag="SF3897"
complement(4397, .5287)
/gene="rarD"
                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                     SCOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
to be correct."

/ pseudo
/ codon start=1
// transl table=11
472. 1818
// locus tag="SF3892"
// produc="orf, conserved hypothetical protein"
// produc="orf, conserved hypothetical protein proprent products and system with provention and system with provention and system with provention and system with provention and system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /noce="Realdues 9 to 146 of 146 are 95 pct identical to residues 1 to 138 of a 138 aa protein from Escherichia coli X12 ref: NP_418262.1" /codon start=1 / transl_table=11 / product="orf, conserved hypothetical protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement (3922. .4362)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /locus_tag="SF3896"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /locus_tag="SF3896"
```

```
/codon start=1
/trans] table=11
/trans] table=11
/product="putative amino acid/amine transport protein"
/protein id="AAPI8666.1"
/db xref="g1:30042944"
/translation="MSSDADHKVGLIPVILMYSGNIMGSGVFLLPANLASTGGIAIY
GWLVTIGALGLSWYZARSTLDSPGGSYAXARCFGPFLGYOTTRVQAVATVLALI
PIVGTAPFGMFWRERGETYMAAMNVSGLGFFGAIGSTLIMVTMMSFTGFSAAGVAGVVK
NPKRNVPIATIGGYLLAACVYLLSTTAIMGHIPVALNYTMSFFGGNAGTPVAGUIIVGILM
TIPQLSSISPNATKEFGLVSSVYFTLVPYLYTCAALLLGHGHFGFKARPATLAVTT
IAPLYCIMAVVGSGAKEVWMSFVILMVITAMYALNYNRLHKNPYPLDAPISKD"
/gene="adiy"
/locus tag="s35623"
/gene="adiy"
/locus tag="adiy"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B4116"

(codon start=1)

/ transl_table=11

/ transl_table=11

/ product="putative ARAC-type regulatory protein"

/ product="putative ARAC-type regulatory protein"

/ product="putative" arab18667.1"

/ db_xref="g1:30042945"

/ db_xref="g1:3004294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /jous tog="83622"
/function="putative transport; Not classified"
/note="residues 1 to 445 of 448 are 92.35 pct identical to
residues 1 to 445 of 445 from Bscherichia coli K-12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /locus tag="83623"
/locus tag="systative regulator; Not classified"
/note="residues 1 to 253 of 253 are 93.28 pct identical to zesidues 1 to 253 of 253 from Escherichia coli K-12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="residues 1 to 755 of 755 are 99.47 pct identical to residues 2 to 756 of 756 from Escherichia coli K-12 :
B4117"
                                                                                                                                                             2 (bases 1 to 290976)
Wei,J., Goldberg.M.B., Burland,V., Venkatesan,M.M., Deng,W.,
Wei,J., Goldberg.M.B., Blunkett,G. III, Rose,D.J., Darling,A.,
Fournier,G., Mayhew,G.F., Plunkett,G. III, Rose,D.J., Zhou,S.,
Mau,B., Perna,N.T., Paynes,B.M., Runyen-Janecky,L.J., Zhou,S.,
Schwartz,D.C. and Blattner,F.R.
Direct Submission
Submitted (13-UTN-2002) Genetics Laboratory, University of
Wisconsin - Madison, 445 Henry Mall, Madison, WI 53706, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       function="enzyme; Degradation of small molecules: Amino
                Complete Genome Sequence and Comparative Genomics of Shigella flexneri Serotype 2a Strain 2457T
Infect. Immun. 71 (5), 2775-2786 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Shigella flexneri 2a str. 2457T"
/mol type="genomic DNA"
/strain="2457T"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db xref="taxon:198215"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="adiA"
/locus_tag="S3624"
complement(2628. .4895)
/gene="adiA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement (68. .1405)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complement (68. .1405)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="yjdE"
/locus_tag="S3622"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      locus tag="S3624"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /serotype="2a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="yjdE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. .290976
                                                                                               Infect. IN
12704152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                            PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10168 AIGACCTIAGAAIGGIGGITIGCCTACCIGCIGACAICGAICTITIAGAGCCIGICGCA 10109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10049
/transl_table=11
/product="ATP-dependent DNA helicase"
/product="AAPA-3335.1"
/protein_id="AANA5335.1"
/db xref="G1:AANA5335.1"
/translation="MLNLESGARQVLOETFGYQOFRPGQEEIIDTVLSGRDCLVVMPT
GGGRSLCYQIPALIANGLTVVVSPLISLMKDQVDQLQANGVAAACLNSTQTREQQLEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AE016990 220-AFR-2003
Shigella flexmeri 2a str. 2457T section 13 of 16 of the complete
genome. AE016990 AE014073
AE016990.1 GI:30042943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9988 TIGGGGACGCTATTITCCCGCTCAGTGATTGCGTTTGAAGTGTGTTAAAGTGGGCAGGCGCG 9929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9688 GIGATGATCGCTAACGCCACCCTTGCTCAAAGGATTGCTCTATGGATTAAAGGACCAAAG 9629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9628 CAGAIGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 9569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       298 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     418 CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 597
                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shigella flexneri 2a str. 2457T
Shigella flexneri 2a str. 2457T
Shigella flexneri 2a str. 2457T
Bacteria, Proteobacteria, Gammaproteobacteria; Enterobacteriaceae;
Enterobacteriaceae; Shigella.
1 (bases 1 to 290976)
Wei,J., Goldberg,M.B., Burland,V., Venkatesan,M.M., Deng,W.,
Wei,J., Goldberg,M.B., Plunkett,G. III, Rose,D.J., Darling,A.,
Mau,B., Perna,N.T., Payne,S.M., Runyen-Janecky,L.J., Zhou,S.,
Schwartz,D.C. and Blattner,F.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10048 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9868 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            358 ACCAATCCCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9808 ACCAATCCCAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 GGCTCTGGTGCAATCAACACTATGACCACCTCGGTCAACCACGGTTAT--CCGGCCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTTGGCGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          478 GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         179 TT-GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGCCAGCCGCG
                                                                                                                                                                                                                                                                                                                                                           3; Gaps
                                                                                                                                                                                                                                                                             Query Match
93.9%; Score 577.6; DB 1; Length 10253;
Best Local Similarity 98.1%; Pred. No. 2.7e-173;
Matches 606; Conservative 0; Mismatches 9; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9568 GCATCGGCGAGGCATGCG 9551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             598 GCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
AE016990
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
```

q

ò

δ 원 QQ  $\delta$ Db

g à

ò

g ò g

à

g

à g à g

à

```
repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         252050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
/codon_start=1
/trans1_table=11
/producE="biodegradative arginine decarboxylase"
/producE="biodegradative arginine decarboxylase"
/producE="biodegradative arginine decarboxylase"
/protein_id="AAP186681."
/db_xref="G1:30042946"
/translation="MKVILV2BEFHQDTWVGNAVBRIADALSQQNYTVIKSTSFDDGFLELLSSNBAIDCLMFKYQNEHPDEHQWYRQLIGKLHERQQNYPVFLLGDREKALAAMD RDLLELUDEFAMILEDTADFIRGRAVARTSROGLLEPLFSALMKYSDIHESWAAP G4QCGFFKTPAGGFTHDGAMTENDBAWTSTSLGSLLLDHTGAFGSBEKTAARVFGARDRSWSVVGTGGSRNFTMØACMTDNDVVVVNDNCHKSIEGGLALTGAREVARVFSR NRYGIIGPIYPGBMQPFTLQKKISEDNENGFYTPATHSIHLAARCSACVARAKEAQ DLLEKTSDRLHPDBAWTGARSPRDIATATRSELAGEDNNGFTYPATHSIHLAALS QASYIHVREGRGAINRSFNOAYMMILATTSELAGCANDVASWADGSGLSLTOEV DEAVDFRQAMARLYKEFTADGSWFFKPWNKEVVTDPQTGKTYDFADAFTKLLATVQD CWYMPGESGAINRSFROAMILDENGTILAPGRGEDBELEFTYPVAALTYAMIGH GIVPTRTTDFQTMFLESGAGVTRGKWGTLNVNTLCSFKHYDANTPLAQVWDELUTGYPD TTANMGTHDLGDTWFRENDFRAMILKENNPGARINREAYSGLPVAALTPREAVNAIVDNNVELUSI ENLEGRIAARCKYT PPPG1PMLLSGENFEGDRXSPQVSYLRSLQSWDHHFPRFEHETEG COMDIEment (5094. .6002)
//gene="ment"/"
//orus_tag="8362"
complement (5094. .6002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /goustag=""gate""
/ Joous tag="gate"
/ Joous tag="gate"
/ Joous tag="gate"
/ Joous tag="gate"
/ Joous tage
/ Joods tage
/ Joous Joous Joous
/ Joous Joous Joons
/ Joous Joous Joous
/ Joous Joous Joous
/ Joous Joous Joous
/ Joous Joous Joous Joous
/ Joous Joous Joous Joous
/ Joous Joous Joous Joous Joons
/ Joous Joous Joons
/ Joous Joons
/ Joons
/ Joous Joons
/ Joon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/transl_table=11
/product="able=11
/product="able=11
/product="alpha-galactosidase"
/product="alpha-galactosidase"
/protein_id="Apr18670_1"
/db_xref="d1:30042948"
/db_xref="d1:30042948"
/translat.ion="WMSAPKITFIGAGSTIFVKNILGDVFHREALKTAHIALMDIDPT
RLESSHIVVRKLMDSAGAGKITCHTQQRALEDADFVVAPQIGGYEPCTVTDFEVC
KRHGLEQTIADTLGGGGINRALRTIPHLWQICENWTEXCPDATMLYVNPMANTWAW
YARYPYIKQVGLCHSVQGTABELARDINIDPATLRYRCAGINHMAFYLELERKTADGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="residues 1 to 451 of 451 are 98.89 pct identical to
residues 1 to 451 of 451 from Bscherichia coli K-12 :
B4119"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YVNLYPELLAAYEAGQAPKPNIHGNTRCQNIVRYEMFKKLGYFVTESSEHFAEYTPWF
IKLGREDLIERYKVPLDEPYRKCPLOGAANWHEREBYKNASRIDIKSREYASTINNA
IWYGEBEYIYGWKKNDGLIDKLPQGCCVEVACLVDANGIOPTKVGTLFSHLAALMQTN
INVOTLLTEAILTENRDRYYHAAMMDPHTAAVLGIDEIYALVDDLIAAHGDWLPSWLH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /locus_tag="83626"
/function="enzyme; Degradation of small molecules: Carbon
compounds"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6060. .6114
/note="BOXC-20"
6285. .7640
/gene="melA"
/louis_tagg="83626"
6285. .7640
/gene="melA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /locus_tag="S3627"
7755. _9164
/gene="melB".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7755. .9164
/gene="melB"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
```

```
/cadom start=1
/product="mallebla" |
/product="mallebla" |
/product="mallebla" |
/product="mallebla" |
/product="mallebla" |
/product="mallebla" |
/db xxef="gi1:30042949" |
/db xxef="gi1:30042949" |
/db xxef="gi1:30042949" |
/tanslation="WITKLSYGEGAFGKDFAIGIVYMYLMYYYTDVVGLSVGLVGTLF
/LYARIWADAINDIMMYTIANDFEWSYNPWILIOTLARSYLEFFREACAGFYTGLY
/VYCYYTIMGMYYTIANDFEWSYNPYTTLDKRENEOLVPYFRFRAGGSTLTLKA
/VYLYFREALVKSLSRRILMAGASILPVLSCGVLLMALMSYHVOLDVIGILLNVGT
/VTLYFFRLVKNDOLSCGLGMALAYNVASNITGPAINYSYNGONDSAEGSHLTLKA
/VTLYFFRLVKNDOLSCGLGMALAYNVASNITGPAINYSYNGONDSAEGSHLTLKA
/VTLYFFRLVVKSLSRRILMAGASILPVLSCGVLLLMALMSYHNVVLIVIGILLNVGT
/VTLYFFRLVVKSLSRRILMAGASILPVLSCGVLLLMALMSYHNVVLIVIGILLNVGT
/VTLYFFRLVADIPVGAVSDVKA"
/VFNTADIPVGAVSDVKA"
/VANTEGSIAVADIPVGAVSDVKA"
//Ocutains 1 REP sequence"
//ocutains 1 REP sequence
//ocutai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         252109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   252170 TCGCTGGCCTCTACTCCATCGCGTCGACCATTGTTCCAGCGCGCAGTTTTTGTGTACTC 252229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        252110 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGCGCAATTGATCTTAAA 252169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 252049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              252289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         251929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon start=1
/transl_table=11
/pransl_table=11
/product="hypothetical protein"
/protein id="AAP18672.1"
/protein id="AAP18672.1"
/brotein id="AAP18572.1"
/branslation="WRTHIEFPILIMIGALALTLILIYTGISAHDKLTWILEVTPVIIV
/translation="WRTHIEFPILIEFPILIMIGALALTLILIYTGISAHDKLTWILEVTPVIIV
VPILLATARRYPLTLLLYTLIFFHAIILMYGGQYTYAKVPYGFEVQEWIGISRNPYDK
                                                                                                                                                   t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
/locus tag="S3627"
/function="transport; Transport of small molecules:
Carbohydrates, organic acids, alcohols"
/note="residues 1 to 469 of 469 are 96.37 pct identical
residues 1 to 469 of 469 from Escherichia coli K-12:
B4120"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 GGCTCTGGTGCAATCAACACTATGACCACCTCGGTCAACCACGGTTAT--CCGGCCGGTG
251930 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCGCGGCGCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251990 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCAATCCCAAAAGTATTGTGTGTTTCTGGCGGGGCGTATTTCGCGCAATTCATGCCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       252230 ACCANTCCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATCATGCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TT-GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 290976;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
93.9%; Score 577.6; DB 1;
Best Local Similarity 98.1%; Pred. No. 4.7e-173;
Matches 606; Conservative 0; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
/transl_table=11
/prduct= hypothetical protein"
/prduct= hypothetical protein"
/protein id="BAB38146.1"
/db_xref="GI:1384199"
/translation="WQAKTAASNTTELDALQQLGFSLVEGEVDLALPVNNASDSGAVV
AGETDIPALRQLASAAFAQSRFRAPWYAPDASSRFYAQWIENAVRGTFDHQCLILRAA
SGDIRGYVELRALIATDAR.GLLAGRGAGAELMQTALNWAYARGKTTLRVATQMGNTA
ALKRYIQSGANVESTAYWLYR"
                        Submitted (26-JUN-2000) Ken Kurokawa, Osaka University, Genome Information Research Center; 3-1, Yamadaoka, Suita, Osaka 565-0871, Japan (E-mail:ken@gen-info.osaka-u.ac.jp, URL:http://www.gen-info.osaka-u.ac.jp/, Tel:81-6-6879-8365, genome project.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="similar to WECE ECOLI gi|2367285 percent identity
99 in 376 aa (Conserved in E.coli K-12)"
6060n_start=1
/evidence=not experimental
/transl_table=11
/product="putative regulator"
/product="putative regulator"
/db xref="Gil:3364200"
/tanslation="MIPFNAPPVVGTELDYMQSAMGSGKLGGDGGFTRRCQQWLEQRF
/translation="MIPFNAPPVVGTELDYMQSAMGSGKLCGDGGFTRRCQQWLEQRF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSAKVLLTPSCTASLEMAALLLDIQPGDEVIMPSYTFVSTANAFVLRGAKIVFVDVRP
DTMNIDETLIEAA.TDKTRVIVPVHYAGVACEMDTIMALAKKHNLFVVEDAAQGVWST
YRRALGGTIGHIGCFSFHSTKNYTAGSBGGATLINNKALIERAEIIEREKGTNRSQFFR
GQVDKYTWRDIGSSYLMSLOQAAYLWAQLEAADRINQQRLALWQNYYDALAPLAKAGR
IELPBIPDGOLQVAHFYIKLRDIGDRSALINFLKRABIMAYFHYIPLHGGFAGREFF
EFHGEDRYTTKESERLLKLPLFYNLSPVNQRTVIATLLNYFS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OLITYLGYLAGAGI ENGYTKYYQYHDNPQQLRRYYGTSSAMYLGFSTLMALVFVLAA
APISLGLFGNHDYQGLYRLYALVQMGIAWGNLLLALMKGFRDAAGNALSLIYGSLIGY
LAYYYSYRLGGYEGALLGALI PALVY PAAVMLIKRGAI DEYSKKEBWDNGLAGQLS
KETYYSYRLGGYEGALLGYALKEKLLAAQYSWDEVGIWGCYSSI SDAYLQFITASFSYYL
LPTLSRLTBKRDIYREVKSLKFYLDAYAAASFTWHLLRDFI WLLLSNKFTAMRDLF
AWQLVGDYLKVGAYVFGYLVIAKASLRFYILAEVSQFTLLMYFAHWLIPTHGALGAAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            translation="MSLAKASLWTAASTLVKIGAGLLVGKLLAVSFGPAGLGLAANFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="similar to WECD_ECOLI gi|1790225 percent identity 98 in 181 aa (Conserved in E.coli K-12)" /codon starta / /codon ctarta / /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="similar to WZXE ECOLI gi|1790227 percent identity 98 in 416 aa (Conserved in E.coli K-12)" /codon start=1 /evidence=not experimental /evidence=not experimental /transl_table=11
                                                                                                                                                                                                                                           'organism="Escherichia coli O157:H7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            product="putative cytochrome"
protein id="BAB38148.1"
db_xref="G1:13364201"
                                                                                                                                                                                                                                                                                                                /sub_strain="RIMD 0509952"
/db_xref="taxon:83334"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AYMATYIVYFSLCCGVFLLWRRRA
                                                                                                                                                                                                                                                                   /mol_type="genomic DNA"
/strain="0157:H7"
                                                                                                                                                                                Location/Qualifiers
1. .318703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="EC84725"
| 785. ....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3032. .4111
/gene="ECs4726"
3032. .4111
/gene="ECs4726"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="ECs4724"
653. .1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             653. .1783
/gene="ECs4724"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1785. .3035
/gene="EC84725"
                                                                                                                                                                                                                                                                                                                                                                                                                            .03. .648
/gene="EC84723"
                                                                                                                                                                                                                                                                                                                                                                       103. .648
/gene="ECs4723"
           Submission
        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
CAGCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT 252349
                                                                                                                         252350 GIGATGATCGGTTACGCCACCCTTGCTCAAAGATTGCTCTATGGATTAAAGGACCAAAG 252409
                                                                                                                                                                                                                                     252410 CAGATGAAGGGGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 252469
                                                                                                                                                                                                                                                                                                                                                                                                                              318703 bp DNA linear BCT 07-MAR-2001
Bscherichia coli O157:H7 DNA, complete genome, section 18/20.
AP002567 BA00007
AP002567.1 GI:13364108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (sites)
Makino,K., Yokoyama,K., Kubota,Y., Yutsudo,C.H., Kimura,S.,
Kurokawa,K., Ishi,K., Hattori,M., Tatsuno,I., Abe,H., Iida,T.,
Yamamoto,K., Ohnishi,M., Hayashi,T., Yasunaga,T., Honda,T.,
Saskawa, G. and Shinagawa,H.
Complete nuclectide sequence of the prophage VT2-Sakai carrying the
verotoxin 2 genes of the enterohemorrhagic Bscherichia coli O157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Complete nucleotide sequence of the prophage VTI-Sakai carrying the bidga toxin 1 genes of the enterchemorrhagic Escherichia coli 0157:H7 strain derived from the Sakai outbreak Gene 258 (1-2), 127-139 (2000)
                                                                                                                                                                                         597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (sites)
Ohnishi,M., Murata,T., Nakayama,K., Kuhara,S., Hattori,M.,
Kurokawa,K., Yasunaga,T., Yokoyama,K., Makino,K., Shinagawa,H. and
                                                                                     537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yokoyama,K., Makino,K., Kubota,Y., Watanabe,M., Kimura,S.,
Yutsudo,C.H., Kurokawa,K., Ishii,K., Hattori,M., Abe,H., Iida,T.,
Yamamoto,K., Hayashi,T., Yasunaga,T., Honda,T., Sasakawa,C. and

    (bases 1 to 318703)
    Ohnishi,M., Kurokawa,K., Makino,K., Yasunaga,T., Shinagawa,H. and Hayashi,T.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Comparative analysis of the whole set of rRNA operons between an enterohemorrhagic Escherichia coli 0157:H7 Sakai strain and an Escherichia coli K-12 strain MG1655 Syst. Appl. Microbiol. 23 (3), 315-324 (2000)
                                                                                GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                      CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGAGCGCTGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 (sites)
Hayashi,T., Makino,K., Ohnishi,M., Kurokawa,K., Ishii,K.,
Yokoyama,K., Han,C.-G., Ohtsubo,E., Nakayama,K., Murata,T.,
Tanaka,M., Tobe,T., Iida,T., Takami,H., Honda,T., Sasakawa,C.,
Ogasawara,N., Yasunaga,T., Kuhara,S., Shiba,T., Hattori,M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Complete genome sequence of enterohemorrhagic Escherichia col
0157:H7 and genomic comparison with a laboratory strain K-12
018. Res. 8 (1), 11-22 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genes Genet. Syst. 74 (5), 227-239 (1999)
20198780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              derived from the Sakai outbreak
                                                                                                                                                                                                                                                                                                                              252470 GCATCGCCGAGGCATGCG 252487
                                                                                                                                                                                                                                                                                       598 GCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Escherichia coli 0157:H7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shinagawa, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shinagawa, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11108008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20564182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11111050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10734605
                                                                                478
                                                                                                                                                                                   538
                              252290
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 9
AP002567/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
                                                                                                                                                                                                                                  g
                                                                             \delta
                                                                                                                            셤
                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                       à
```

gene

```
37411
                                                                                                                                                                                                37351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             36930 CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 36871
                                                                                                                                                                                                                                                                           37291
                                                                                                                                                                                                                                                                                                                                                                                                                                    37171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG 36931
                                                                                                                                                                                                                                                                                                                                                        37290 TTGGGGAAGGCTATTTTGCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCG 3723:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37110 Accaarcccaaaagrarrengriricregeegeerarricceeaarrearcareares 3705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear BCT 24-DEC-2002 the complete genome.
                                             ď
                                                                                                                                                                                                                                                                                                                                                                                               297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                             118
                                                                                                                                                                                                                                        178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 477
                                                                                                                                                                                                                                                                                                                  237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        597
                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Escherichia coli CFT073

Bacteria, Proteobacteria, Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.

[ (bases 1 to 301566) Welch, R.A., Burland, V., Plunkett, G.D. III, Redford, P., Roesch, P., Rrasko, D.A., Buckles, E.L., Liou, S.-R., Boutin, A., Hackett, J., Stroud, D., Mayhew, G.F., Roee, D.J., Zhou, S., Schwartz, D.C., Perna, N.T., Mobley, H.L.T., Donnenberg, M.S. and Blattner, F.R. Extensive Mosiac Structure Revealed by the Complete Genome Sequenc of Uropathogenic Escherichia coll.

Proc. Natl. Acad. Sci. U.S.A. 99 (26), 17020-17024 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 301566)
Welch, R., Burland, V., Plunkett, G.D. III, Redford, P., Roesch, P.,
Rasko, D.A., Bucklee, E.L., Liou, S.-R., Boutin, A., Hackett, J.,
Stroud, D., Mayhew, G.F., Rose, D.J., Zhou, S., Schwartz, D.C.,
                                                                                                                        Argaccringalargeregerireceraceracidacarcalicaritrinalacerereged
                                                                                                                                                             61 GCCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTAT--CCGGCCGGTG
                                                                                                                                                                                                                                          GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG
                                                                                                                                                                                                                                                                           37350 GCGTCTATTGCCGGGCTTCAGACGGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                               GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCCGCTGGTGCAATTGACCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                        GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTTATGCTGGTGGGAGCGCTGTTA
                                                                                                                                                                                                  37410 GGCTCTGGTGCAATCAACACTATGACCACTTGGCTCAACCACGGTTATCGCGGCGCGGTG
                                                                                                                                                                                                                                                                                                                  CCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCAATCCCAAAAGTATTGTGTGTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGGTCGATATTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37050 cagccocaacrdardcagrararcordcrcocrorcaccacrariorocrocararrarr
                                                                                  ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                           Gaps
          Length 318703;
                                             ۳
.
                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18 of
      Score 571.2; DB 1;
Pred. No. 5.4e-171;
); Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
of 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301566 bp
CFT073 section 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          dcarceceaecearece 36853
                                           . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Escherichia coli CFT073
AE016769 AE014075
AE016769.1 GI:26110701
      Query Match
Best Local Similarity 97.4%;
Matches 602; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCATCGGCGAGGCATGCG
                                                                                                                                                                                                                                                                                                                  TT-GGGACGCTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AE016769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12471157
                                                                                                                                                                                                                                          119 (
                                                                                                                                                                                                                                                                                                                                                                                               238
                                                                                  н
                                                                                                                        37470
                                                                                                                                                                                                                                                                                                                    179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
AE016769/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                    ď
                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                  ò
                                                                                                                                                           ò
                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="BAB38151.1"
/brotein_id="BAB38151.1"
/brotein_id="BAB38151.1"
/branslation="MANNATAPPTLAGLOLIGWRDWQHALDYLFADGQLKQGTLVAI
NAEKMLTIEENAEVRELINAAEFKYADGISVVRSVRKKYPQAQVSRVAGADLWEELNA
ARKKEGTYVELVGGKPEVLAQTEAKLRNQWNVNIVGSQDGYFKFBORQALFERIHASG
AQIVTVAMGSPKQEIFMEDCRLVHPDALYMGVGGTYDVFTGHVKRAFKIWQTLGLEWL
6394. ,7779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /transl_table=11
/product="butative amino acid/amine transport protein"
/product="butative amino acid/amine transport protein"
/protein id="Bab38152.1"
/db_xref="G1:13364205"
/translation="WADNYRELQRGLEARHIELIALGGTIGYGLFWGAASTLKWAGFS
VLLAYIIAGLFVFFINKSWGEMLFLEPVTGSFAVYAHRYMSPFRGYLTAWSYWFWWMA
VGISETTAIGYYVQFRYFBEMAQWIPALIAVALVALANLANTAARLAGEIEFWFAMIKVTT
IIVMIVIGLGVIFFGFGNGGQSIGFSNLTEHGGFFAGGWKGFLIABLICIVVASYQGVEL
                                                                                                                                                                                                               GLSDSCPALSVQFFPGKKSLABAVIAKAKANNROQRFFFHGGFRFTLMLALLSGGGTKPS
QFYWHIWGADLYELSSGLRYKLFYPLRRLAQKRVGCVFATRGDLSFFAKTHPKVRGEL
LYFPTRANDANDROREGKMTILVGNSCDRSNBHIAALBAVHQOFGDTVKVVVD
MYPPHNBAYIEBYRQAGLELFSBENLGVLSEKLBFDAYLTLLRQCALGYFIFARQOG
IGTLCLLIQAGIPCVLNRENPWODMTEQHLFVLFTTDDLNEDIVREAQRGLASVDKN
TIAFFSPNYLQGWQRALAIAAGEVA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IIRGWISLWMLAAAGVLGIVGWFWLALKRYGMNVSGDEAFYTFLYLTRDTFSFWENLA
LLLQWYNDTDFQGLAPIVRDFYVFIFESWLWFWFSRWYLWSAYFFWRALLANHSGLAIS
PTLIGSLYVWGGALFIFLGAIVVGLIKWFDWLYELGNRETNRYKAAILHSFCFGAIF
MHYUARSGLDSFYSRVYFFIYVFGACLMIAKLYWLEBSAGLIHKRYKSSLRTQVRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gi 2367289 percent identity coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="similar to YIFK ECOLI gi|2367290 percent identity in 461 aa (Conserved in E.coli K-12)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/evidence=nec_experimental
/transl_table=11
/producT="probable UDP-N-acetyl-D-mannosaminuronic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5463. .6203
/gene="ECs4728"
/note="similar to WECG ECOLI
98 in 246 aa (Conserved in E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1
'evidence=not_experimental
'trans1_table=11
                                                                                                                                                                                                                                                                                                                                   4108. .5460
/gene="ECs4727"
4108. .5460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6394. .7779
/gene="EC84729"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5463. .6203
/gene="ECs4728"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       394. .7779
gene="EC84729"
                                                                                                                                                                                                                                                                                                                                                                            1108. .5460
/gene="ECs4727"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5463.
```

gene

CDS

gene

CDS

TITLE JOURNAL

CDS

```
/EC number="2.4.1.44"
/function="enzyme; Surface polysaccharides and antigens"
/note="Bscherichia coli K-12 ortholog: b3627; Escherichia
coli o157:H7 ortholog: z5053"
/codon start=1
/transl_table=11
/product="Lippoplysaccharide 1,3-galactosyltransferase"
/product="Lippoplysaccharide 1,3-galactosyltransferase"
/protein_id="AAAN82889:1"
/db_xref="C1:26110705"
/translation="MSAHYENPOPEADIDEADIORISGIANSTHOTOTHLYMCERISALP
TYNWSIAMYERFVIADYFENDDIPEADIORISGIANSTHIMDIANNYAAVYTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DANWASLRAGSLOCNELEKGY FNSGYLLINTLAWAGESVSAKAMSMLADKAVVSRLTY
MDQDILNLILLGKVKFIDAKYNTQPSLNYELKKSFICPINDETVLIHYVGPTKPWHYW
AGYPSAQPPIKGKEASPWKNEPLMRPMNSNYARYCAKHNFKQNKPINGIMNYIYYFYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAN82890.1"
/db_xref="G1:26110706"
/tb_xref="G1:26110706"
/translation="MYWMYELKEPFATLWRCKDPFEEVKTLQGEVFRELETRRTLRFE
MAGKSYFLKHIGTTLKEIL IKNLLSLRMPVLGADREWNAIHRLRDVGVDTMYGVAFGE
KGINPLTREFIIFROFIISLEDYCADWATNPPDVRYKRMLIKRYATMVRDMHAAG
INHRDCYICHFLLHLPFSGKEEELKISVIDLHRAQLRTRYVPRRWRDKDLIGLYFSSMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MUVAFCLYKYFFFGGLQRDFMRIAQTVAARGHHVRVYTQSWEGE"
CPDVFELIKVPVKSHTNHGRNAEYFAWVQKHLREHPVDRVVGFNKYFGLDVYYAADVC
CPDVFELIKVPVKSHTNHGRNAEYFAWFFFGGKFYQLLLUFVGFNKYFGLDVYYAADVC
RYELKPPFFFYAFFFGGKFYGLLGVYYYYAAFFFKAKFTAFGGKFYQLLLLQVGSDFTRKGVDRSIEAL
RFFILFDFTYFDRYYSQQPANSFFFKAKFFALAEKRGYRSNVHFFSGRNDVSELMAAADLLLH
ASLEDSLAHNTLLYVVGQDKFRKFFRALAEKRGVRSNVHFFSGRNDVSELMAAADLLLH
         AFNNANIYLAKDFDTIYTLKNELHDRSHRKYQQTITDKTVLIHYTGITKPWHSWAGYP
SASYFNIAREQSPWKKYPLKEARTVAEMQKQYKHLFAHGEYIKGITSLIKYKLKK"
complement (2840. .3856).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gone_tag="c4455"
/focus_tag="enzyme; Macromolecule metabolism:
/function="enzyme; Macromolecule metabolism:
/inpoplymaccharide
/note="diucosyltransferase 1; Escherichia coli K-12
ortholog: b3631; Escherichia coli O157:H7 ortholog: z5055"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAYQBAAGIVILEAITAGLPVITTAVCGYAHYIVDANCGEAIAEPFRQETLNEILRKA
LTQSSLRQAWAENARHYADTQDLYSLPEKAADIITGGLDG"
complement (5783, .6841)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Escherichia coli K-12 ortholog: b3630; Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'product="Lipopolysaccharide core biosynthesis protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'product="Lipopolysaccharide core biosynthesis protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IGLTORDIWRFMKVYFSAPLKDILKQEQGLLSQAEAKATKIRERTIRKSL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="rfap"
/locus tage="c4454"
/gene="rfap"
/locus tage="c4454"
/locus tage="c4454"
/function="enayme; Macromolecule metabolism:
Lipopolysaccharide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O157:H7 ortholog: 25054"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAN82891.1"
/db_xref="GI:26110707"
                                                                                                                                   /locus_tag="c4453"
complement(2840, .3856)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (3872. .4678)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /locus_tag="c4455"
complement(4662..5786)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="rfaQ"
/locus_tag="c4456"
complement(5783. ,6841)
/gene="rfaQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement (4662. .5786)
                                                                                                                                                                                                                                locus_tag="c4453"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 o, on start=1 /trans1 +---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene="rfaG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene="rfag"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rfag"
                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /locus_tag="c4450"
/note="Residues 1 to 341 of 342 are 98.24 pct identical to
residues 1 to 341 of 341 from Geneppt.129 :
-95|AAc69673.1| (APC19746) UDP-galactose: (galactosyl) LPS
alphal, 2-galactosyltransferase WaaW [Escherichia coli]"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="G1:26110703"
/translation="MITSIRYGFSFYYKONDNKYKEIFDEILAYNFKTVKVLRNIDD
/translation="MITSIRYGENEPLKSFYKGDYYQNLIVETDRVRSAGLTFPND
PYFLABEKIFNYASYPEMLIEVYGYELNDMFIPEDVKABIKASMEKLHALMMLSGD
PHRGNFIVSKDGVRIIDLSGKSCTABEKKARDRLAMERHLGJANEIKDYGYYSVIYRTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYATFFRIVAFOYLSETTENLIYIDADVICKGSLAGLIDINFDGDKFAAVIKDVPFNQ
EKPAKRLAIEGLPGNYFNAGVYYLQLEAMAKNDFMKKAIAMLASDPQHTKYKCLDQDI
LNILFFSHCIFISGDYDCFYGIDYELKNKSDEDYKKTITDDTKLIHYVGYTKPMNDWT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="MNEFIKERFSYLADNKKENVPELNVSYGIDKNFLYGAGYSISSV
LINNSDINFYCHYFTDYYDDDYLKSPETAKOFNTSIIVYLIDPKYRADLPTSGFWSY
ATYRRYLSFEYLESISTLIYLDADVVCKGSLKPLTKIIFKDERAVIPDNDSTQAAC
AKRINIPGMNGRYFNAGVIYVNLKKWHEANLFPYLLFLIRGETKYGGSLKKIDODALNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    translation="MDLLAESITEVAVSGEIANTDRVLNIAYGIDRNFLFGAAVSMOS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NY POQKY FNEAY QVSCWNDVAFI PATNEK QY QVKY QHAKKNGDTFNAFIYFIKFKLNK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VVMHNPDLAVKFHLFTDYIDEDYLQRVNAFTSKNANVEVRIYKVSSAFIDIFPSLKQW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /locus_deg="04452"
/BC_number="2.4.1.58"
/FUnction="enzyme; Surface polysaccharides and antigens"
/note="Bscherithia coll K-12 ortholog: b3626; Escherichia
coll 0157:H7 ortholog: z5051"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Escherichia coli K-12 ortholog: b3625; Escherichia
coli 0157:H7 ortholog: z5052"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'trans] table=11
product="Lipopolysaccharide core biosynthesis protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       / transI_table=11
product="lippoplysaccharide 1,2-glucosyltransferase"
protein id="AAN82888.1"
db_xref="d1:26110704"
Perna, N.T., Mobley, H.L.T., Donnenberg, M.S. and Blattner, F.R. Direct Submission
Submitted (20-JUN-2002) Genetics Laboratory, University of Wisconsin - Mailson, 445 Henry Mall, Madison, WI 53706, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            locus tag="c4451"
function="enzyme; Macromolecule metabolism:
.ipopolysaccharide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="UDP-galactose:(galactosyl) LPS
alphal,2-galactosyltransferase"
/protein_id="AAN82886.1"
/db_xref="GI:26110702"
                                                                                                                                                       protein_id="AAN82887.1"
                                                                                                                                                                                                                                                                              /db_xref="taxon:199310"
complement(72. .1100)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /locus_tag="c4451"
complement(1126, ,1818)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /locus_tag="c4452"
complement(1828, .2823)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (1126. .1818)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             complement (1828. .2823)
                                                                                                                                                                                                                                                                                                                                                                          /locus_tag="c4450"
complement(72. .1100)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'codon start=1
'transI_table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon start=1 trans1 table=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="rfaY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LRKF1KKLKGKA"
                                                                                                                                                                                                                                                                                                                                             gene="waaw"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene="rfaY"
                                                                                                                                                                                                                                                                                                                                                                                                                                         gene="waaw"
```

gene

gene

CDS

```
280654 CAGAIGAAGGCGCTGAATAAGATTTTCGGCTCGTTATTTATGCTGGTGGGGGCGCTGTTA 280595
                                                                                                                                                                                                                                                                                                                                                                                                                             Escherichia coli O157:H7 EDL933

Bacteria, Proteobacteria, Gammaproteobacteria; Enterobacteriales;
Bacteria, Proteobacteria, Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.

Enterobacteriaceae; Escherichia.

I (bases I to 1059:2)

Perna, N.T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J.D., Rose, D.J., Maybew, G.F., Evans, P.S., Gregor, J., Kirkpatrick, H.A., Posfai, G., Hackett, J., Klink, S., Boutin, A., Shao, Y., Miller, L., Apodaca, J., Anatharaman, T.S., Lin, J., Yen, G., Schwartz, D.C., Welch, R.A. and Blattner, F.R.

Genome sequence of enterohaemorrhagic Escherichia coli O157:H7

Nature 409 (6819), 529-533 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /function="orf; Unknown function"
//function="orf; Unknown function"
//note="Residues 1 to 131 of 254 are 95.41 pct identical to
Mossidues 1 to 131 of 161 from Escherichia coli K-12 Strain
MG1658: B3815"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /transl_cable=11
/protein_id="AAGS9008.1"
/protein_id="AAGS9008.1"
/brotein_id="NAGS9008.1"
/translation="wahRiligkgmittanikkiflalatalatanabaddcalsdftlt
vQaytvnpqtervkgygmingermgthalladnusgggvygmammgsiydbsyaplg
IlysngqgyrytaniaAsggsgrpfrpRegysfyrgdgbyvgivglygbyvgsgp
MABSNSVINPRIHPWASSKIRNGVGINKHGNAVELSQQATNFYDFRCYARAKLNVB
QLLYldgtishwymkggalpwqryprvtmisverkg"
                                                                                                                                                                                                                                                                                AE005613 10592 bp DNA linear BCT 21-MAR-2001
Escherichia coli 0157:H7 EDL933 genome, contig 3 of 3, section 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Perna N.T., Plunkett, G. III, Burland, V., Mau, B., Glasner, J.D.,
Rose, D.J., Mayhew, G.F., Evans, P.S., Gregor, J., Kirkpatrick, H.A.,
Rose, D.J., Mayhew, G.F., Evans, P.S., Gregor, J., Kirkpatrick, H.A.,
Rosefai, G., Hackett, J., Klink, S., Boutin, A., Shao, Y., Miller, L.,
Grotbeck, E.J., Davis, N.W., Lim, A., Dimalanta, E., Potamousis, K.,
Apodaca, J., Anantharaman, T.S., Lin, J., Yen, G., Schwartz, D.C.,
Welch, R.A. and Blattner, F.R.
Direct Submission
I. Submitted (12-07-2000) Laboratory of Genetics, University of
Wisconsin, 445 Henry Mall, Madison, WI 53706, USA
Location/Qualifers

1. 10592
| // Coganism="Escherichia coli 0157:H7 EDL933"
| // Arrain="Escherichia coli 0157:H7 EDL933"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /serotype="0157;H7"
/db_xref="taxon:155864"
/note="enterohemorrhagic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1206. .2156
/gene="corA"
/note="synonym: Z5333"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="Z5332"
complement (72. .836)
/gene="Z5332"
                                                                                                                                                 280594 GCATCGGCGAGGCATGCG 280577
                                                                                                     615
                                                                                                                                                                                                                                                                                                                                                        AE005613 AE005174
AE005613.1 GI:12518685
                                                                                                   GCATCGGCGAGGCATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
538
                                                                                                     598
                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                            RESULT 11
AE005613/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
  ò
                                            g
                                                                                                ò
                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              281014 TIGGGGACGCIATITICCCGCTCAGTGATTGCGTTTGAAGTGTGAAGTGGGCAGGCGCA 280955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               280714 GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG 280655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  281075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     281074 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG 281015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              280894 TCGCTGGCCTCCACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 280835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    280834 ACCAATCCCAAAAGTATTGTGTTTTTTGGGGGGGTATTTCGGCAATTCATCATGCGGCAG 280775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               280715
                                                                                                                                                                                           /product="Lipopolysaccharide core biosynthesis glycosyl transferase rfaQ" | protein id="AaN82892.1" | db="xaaN82892.1" | db="xaaE="G1:26110708" | translation="MDKPFRRILLIKWRFHGDMLLTTPVISSLKKNYPDAXIDVLLYQ
                                                                                                                                                                                                                                                                                                                            DTIPILSENPEINALYGIKOKKAKASEKIANFPYLIKULANKYDLINULDOWNYAI
LVALLNAKVKISODYHHROSAFWRNSTHIVPLOGGNVVESNLSVLPFLGLESLVKOT
TWAYDPASWKRMRELDHAGVGONYVOIOPTARQIFKCWDNAKSAUJDALHAGGYEV
VLTSGPDKDDLACVRBIAOGCOTPPVTALAGKKYTPPELGALIDHAGLFTGVDSAPAHI
AAAVNTPLISLFGATDHIFWRPWSNNMIQFWAGDYREMPTRDQRDRNEMYLSVIPAAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              478 GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /locus_tag="c4457"
/EC_number="2.-.-."
/EC_number="2.-.-."
/function="enzyme; Surface polysaccharides and antigens"
/note="Escherichia coli K-12 ortholog: b3633; Escherichia
coli 0157:H7 ortholog: 25057"
/codon start=1
/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 GGCTCTGGTGCAATCAACACTATGACCACCTCGGTCAACCACGGTTAT--CCGGCCGGTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               238 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGCGCGCCGCTGGTGCAATTGACCTTAAA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        418 CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAA 417
                                                                                          /note="mscherichia coll K-12 ortholog: b3632; Escherichia coll 0157:H7 ortholog: 25056" /codon start=1 transl_tansl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="3-deoxy-D-manno-octulosonic-acid transferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281134 GGCTCTGGCGCAATCAACACCATGACCACCTCGCTCAACCACGGTTATCGCGGCGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TT-GGGACGCTATTTTCCCCGCTCAGTGATTGCGTTTGAAGTGTAAAGTGGGCAGGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          280774 CAGCCACAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGGTCGATATTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 301566;
                      /BC_number="2.-.-.-"
/function="enzyme; Macromolecule metabolism:
Lipopolysaccharide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 566.4; DB 1;
Pred. No. 1.9e-169;
0; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           VIAAVDKLLPSSTTGTSL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     locus tag="c4457"
254. 78531
gene="kdtA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7254. .8531
/gene="kdtA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 96,9°
Matches 599; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
/codon_start=1
/transl_table=11
/product="orf, hypothetical protein"
/product="orf, hypothetical protein"
/product="orf, hypothetical protein"
/product="orf, hypothetical protein"
/protein_id="AAG$9015.1"
/db_xref="G112518691"
/translation="MDAKQTRQGVILALAAYFINGIAPAYFKLIYYVPADEILTHRVI
WSFFRWVLMSICRQWSYLEXTLIGFPQXIRAAYSAVIIGGNWLEFWADANTHHNLEA
SIGYFUNDEVNILGGNIGAATHLESTMGVILALAAYFINGORINGLAVICAGNIFGSEPINGGNPGNILALIA
WGAALHFWNDALYTYORRKS"

GONDlement (5780. 6265)
/gene="yyg1"
/note="synonym: 25341"
/complement (5780. 6265)
/gene="yig1"
/note="synonym: 25341"
/complement (5780. 6265)
/gene="yig1"
/note="synonym: 25341"
/complement (5780. 6265)
/gene="yig1"
/note="Residues 1 to 161 of 161 are 100.00 pct identical
/note="Residues 1 to 161 of 161 from Escherichia coli K-12
Strain MG165: B3820"
/codon_start=1
/transl_table=11
/product="not" hypothetical protein"
/product="not" hypothetical prot
                                                                                                                                                                                                                                                                                                             4483. .4794
| gene="25339" |
4483. .4794
| gene="25339" |
4483. .4794
| function="orf; Unknown function" |
| function="orf; Unknown function" |
| function="orf; Unknown function" |
| function="orf: and finished                                                        /transl_table=11
/protein_id="AAG59013.1"
/brotein_id="AG59013.1"
/translation="MFKS18691"
/translation="MFKS1811FYPSKLERLSREQFIIYTLTSWSILITLNDINLAL
SFILVINNTYVNINGARGARDTGCKAIYFVLISLGLTLFSIISAAIEGVRCESLSVQ
LNVAWILFTTIMLSAIPSAKMSLSAH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="rarb"
/function="orf; Unknown function"
/functe="sesidues 4 to 295 of 295 are 92.12 pct identical to
residues 8 to 299 of 300 from Escherichia coli K-12 Strain
MG1655: B3819"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6412. .7281
/gene="pldh"
/note="synonym: Z5342"
6412. .7281
/gene="pldh"
/function="enzyme; Central intermediary metabolism:
Phosphorus compounds"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90.0%; Score 553.8; DB 1; Length 10592; ilarity 97.2%; Pred. No. 1.2e-165; Conservative 1; Mismatches 13; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complement (4841. .5728)
/gene="rarD"
/note="8ynonym: 25340"
complement (4841. .5728)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Simil
Matches 584; C
                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ∂
                                                                                                                                                                                                                                                                                           // gene="25335"
complement(2866 . 3534)
// gene="25335"
// function="0rf; Unknown function"
// note="No significant matches"
// codon start=1
// transl_table=11
// protein_id="AA659011.1"
// db_xref="di:12518689"
// transl=tation="MANYLLESINIPCTLEFTISLFDNYSADDMQYGDMVEQDFLSLG
// transl=tation="MANYLLESINIPCTLEFTISLFDNYSADDMQYGDMVEQDFLSLG
// transl=tation="MANYLLESINIPCTLEFTISLFDNYSADDMQYGDMVEQDFLSLG
// db_xref="di:12518689"
// transl=table=11
// prode="manyllesinipct"
// gene="25336"
// gene="25336"
// gene="25336"
// function="orf; Unknown function"
// note="Residues 1 to 39 of 39 are 100.00 pct identical to residues 278 to 316 from GenePt 118 if function="orf; Unknown function"
// note="Residues 1 to 39 of 39 are 100.00 pct identical to residues 278 to 316 from GenePt 118 if function="orf; Unknown function"
// note="Residues 278 to 316 of 216 from GenePt 118 if gi|6960250|gb|AAF33440.1| (AF233324) S. typhimurium
// note="Residues 278 to 316 of 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1206. .2156
//gene="corA"
/functions" transport; Transport of small molecules:
Cations"
/fore="Residues 1 to 316 of 316 are 100.00 pct identical
to residues 1 to 316 of 316 from Escherichia coli K-12
Strain MG1655: B3816"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement(2686, .3534)
/gene="Z5335"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement (2198. .2689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="Z5334"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
```

7

Gaps

d

g ò g ò q  $\dot{\delta}$ g

ò

```
S (bases 1 to 212936)
S DOB Joint Genome Institute.
Direct Submission
Submitted (12-0AN-2000) Production Sequencing Facility, DOB Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA Genome Institute Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institute
Center: Joint Genome Institu
                                                                          10473
                                                                                                                                                                                                                           10413
                                                                                                                                                                                                                                                                                                                                                                     10353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10292 Arcacarcaaratrarracaacacaaarrirraraarararaaraaraaaara 10233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10232 TGTGTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCA 10173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA linear HTG 10-FEB-2000 WORKING DRAFT SEQUENCE, 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    554
                                                                                                                                                     194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              614
       135
                                                                                                                                                                                                                                                                                                  254
                                                                                                                                                                                                                                                                                                                                                                                                                                           255 GGGAATCCAGCAGTGGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         315 ATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTGTGAATCTCACCAATCCCCAAAAGTAT 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 212936)
DOE Joint Genome Institute.
Sequencing of Mouse
Office of August
                                                                                                                                                                                                                                                                                                                                                 10412 CCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGGGCTTACTTGATTTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              136 TCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT-GGGACGCTATTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAAGCAGATGAAGGCGCTGAA
                                                                                                                                                                                                                   10472 TCAGACCGGACTGGCGATTCATATTGTGCTGGCTTGGCGTTGGGGACGCTATTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10112 CACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  555 TAAGATTTTCGGCTCGTTGTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGC
   CACTATGACCACCTCGCTCAACCACGGTTAT - - CCGGCCGGTGGCGTCTATTGCTGGGCT
                                                                                                                                                                                                                                                                                              TGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       435 GTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus clone RP23-252M21, unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC020970 AC020970. GI:6691260
HTG; HTGS_PHASE1; HTGS_DRAFT. Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G 9992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   615 G 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        495
                                                                                                                                                                                                                                                                                          195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      375
78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
AC020970/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
```

임 ò 셤

셤 ò

ò

```
NOTE: This is a 'working draft' sequence. It currently consists of 144 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                              gap of unknown length gap of unknown length contig of 1241 bp in length gap of unknown l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /P '''
length
'n length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
bp in length
length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bp in length
length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bp in l
length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
bp in 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
bp in l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      끆
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ni qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d of list
of unknown le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 1209 h
unknown ]
of 1213 h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unknown
of 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
of 1286 l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of 1565 bunknown of 1177 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 1202 h
unknown
of 1207 h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           unknown
of 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
of 1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig of gap of unly contig of gap of unly contig of unly contig of gap of unly gap of unly contig of contig of unly contig of unly contig of gap of unly contig of gap of unly contig of gap of unly contig of unly co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig of
gap of unk
contig of
gap of unk
contig of
gap of unk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig of
gap of unk
contig of
gap of unk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of
                                                                                                                                                                                                                                                                        2363:
                                                                                                                                                                                                                         1159:
                                                                                                                                                                                                                                                                                                                               3604:
                                                                                                                                                                                                                                                                                                                                                                              5188:
                                                                                                                                                                                                                                                                                                                                                                                                                                6372:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7737:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9783:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11046:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12223:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13492:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14669:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15886:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17089:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18308:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19518:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20710:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21932:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25328:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27849:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31877:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23606:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29135:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33065:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35474:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39072:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26649:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30700:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34267:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36650:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37859:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40406:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42864:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41630:
                                                                                                                                                                                                                                                                           1160
                                                                                                                                                                                                                                                                                                                                                                              3605
                                                                                                                                                                                                                                                                                                                                                                                                                                   5189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18309
                                                                                                                                                                                                                                                                                                                             2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        36651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               41631
```

ap of unknown ontig of 1336 ap of unknown ontig of 1336 op of unknown ontig of 2140 ap of unknown optig of 1392 ap of unknown ontig of 1392 ap of unknown ontig of 1392 ap of unknown ontig of 1510 ap of unknown ontig of 1510	ontig of 1193 opting of 1193 ap of unknown ontig of 1291 opting of 1205 ap of unknown ontig of 1205 ap of unknown ontig of 1721 ap of unknown ontig of 1225 ap of unknown ontig of 1225 ap of unknown ontig of 1240 ap of unknown ontig of 1200	out of unknown on to during of unknown on tight of 11857 on the out of unknown ontig of 1375 on tight of 1501 on tight of 1251 on tight of 1501 on tight of 1505 on tight of 150	ap of unknown length ontig of 1525 bp in 1 ap of unknown length ontig of 1223 bp in 1 ap of unknown length ontig of 1260 bp in 1 ap of unknown length ontig of 1520 bp in 1 ap of unknown length ontig of 1520 bp in 1 ap of unknown length ontig of 1322 bp in 1 ap of unknown length ontig of 1326 bp in 1 ap of unknown length ontig of 1236 bp in 1 ap of unknown length ontig of 1404 bp in 1 ap of unknown length
65 44200: 01 46087: 88 4827: 28 49518: 19 50910: 11 52420:	14 55004: 05 56300: 01 57505: 01 57505: 02 61632: 03 62880: 81 64220: 21 65605: 06 68682: 06 68682:	13 71895: 96 73462: 63 74806: 07 76205: 06 77580: 81 79081: 82 80314: 15 81899: 00 83140:	66 85888 66 89 87155 9 89 87155 9 86 88435 9 36 89955 0 36 89955 0 37 8996 0 38 896 0 38 800 0 38
* * * * * * * * * * * * * * * * * * *	**************************************	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	**************************************

93918 95448: contig of 1531 bp in length 95449 96800; contig of 1325 pp in length 96801 97978; contig of 1178 bp in length 97979 99179; contig of 1201 bp in length 97979 99179; contig of 1201 bp in length 97979 99179; contig of 1201 bp in length 97979 9180 100437; contig of 128 bp in length 9798 100438 101827; contig of 128 bp in length 9798 101828 101817; contig of 1390 bp in length 9798 103117; contig of 1390 bp in length 9798 10316 104550; contig of 1390 bp in length 9798 10316 10553; contig of 1433 bp in length 9799 10553 107523; contig of 1669 bp in length 9790 107524 109208; contig of 1685 bp in length 9790 110430; contig of 1222 bp in length 9790 110430; contig of 1222 bp in length 9790 110430; contig of 1222 bp in length 9790 110431 111662; contig of 1232 bp in length	2; Length 212936; -137; 10; Indels 12;	1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA 60	61 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCCGGCCGGTG 118	9 GCGTCTATTGCTGGGCCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG 178	9 TIGGGACGCTATITICCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCGGGGCGG 238	9 CTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCCGCTGGTGCCATTGACCTTAAAT 298	99 CGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCA 358	9 CCAATCCCAAAAGTATTGTGTTTCTGGGGGC 	9 AGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTG 478	9 TGATGATGGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGC 538	9 AGATGAAGGGGTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGGAGGGGCTGTTAG 598 	99 CATCGGCGAGGCATGCG 615 
	Query Matc Best Local Matches 5	Qy Db 17553	Qy 6 Db 17548	Qy 11. Db 17542	Qy 175363	Oy 23.	Oy 299 Db 175243	Oy 35 Db 17518	Oy 41 Db 17512	Oy 47.	Oy 53. Db 17500	Qy 59.

REFERENCE AUTHORS TITLE JOURNAL REFERENCE AUTHORS TITLE JOURNAL

COMMENT

```
gap of unknown length
contig of 1182 bp in length
gap of unknown length
contig of 142 bp in length
gap of unknown length
gap of unknown length
contig of 286 bp in length
gap of unknown length
gap of unknown length
gap of unknown length
gap of unknown length
contig of 1610 bp in length
gap of unknown length
contig of 160 bp in length
gap of unknown length
contig of 106 bp in length
gap of unknown length
gap of unknown length
gap of unknown length
gap of unknown length
                                                                                                                                                                                                                                                                                                                 gap of unknown length
gap of unknown length
gap of unknown length
gap of unknown length
contig of 861 bp in length
gap of unknown length
gap of unknown length
gap of unknown length
gap of unknown length
contig of 1323 bp in length
gap of unknown length
gap of unknown length
contig of 1323 bp in length
gap of unknown length
gap of unknown length
contig of 1335 bp in length
gap of unknown length
gap of unknown length
contig of 899 bp in length
gap of unknown length
gap of unknown length
contig of 899 bp in length
gap of unknown length
gap of unknown length
contig of 1486 bp in length
gap of unknown length
contig of 1486 bp in length
gap of unknown length
contig of 1486 bp in length
gap of unknown length
gap of unknown length
contig of 1268 bp in length
gap of unknown length
gap of unknown length
contig of 1268 bp in length
gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length

of 741 bp in length

tuknown length

of 867 bp in length

unknown length

unknown length

unknown length

unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 537 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gap of a contig contig contig gap of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                    23579:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29473:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30372:
                     15298:
                                                     16234:
                                                                                   16376:
                                                                                                                     16664:
                                                                                                                                                     17631:
                                                                                                                                                                                     19241:
                                                                                                                                                                                                                    20453:
                                                                                                                                                                                                                                                    20559:
                                                                                                                                                                                                                                                                                   21117:
                                                                                                                                                                                                                                                                                                                    21655:
                                                                                                                                                                                                                                                                                                                                                      21818:
                                                                                                                                                                                                                                                                                                                                                                                      22679:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        24383:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25612:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25957:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27260:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28596:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31202:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32688:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         33431:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33693:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34616:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35884:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            36459:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36698:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37941:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38682:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              39549:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40792:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            42585:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44115:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              45300:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46417:
                                                     15299
                                                                                   16235
                                                                                                                     16377
                                                                                                                                                     16665
                                                                                                                                                                                     17632
                                                                                                                                                                                                                    19242
                                                                                                                                                                                                                                                    20454
                                                                                                                                                                                                                                                                                    20560
                                                                                                                                                                                                                                                                                                                    21118
                                                                                                                                                                                                                                                                                                                                                      21656
                                                                                                                                                                                                                                                                                                                                                                                      21819
                                                                                                                                                                                                                                                                                                                                                                                                                      22680
                                                                                                                                                                                                                                                                                                                                                                                                                                                        23580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            36997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            39550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42586
                     14117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45301
                                                                                                                                                                                                                                                             Upublished

Direct Dases 1 to 256333)

So Dobbit Genome Institute.

Direct Submission

Submitted (10-JAN-2000) Production Sequencing Facility, DOE Joint Genome Institute, 2800 Mitchell Drive, Malnut Creek, CA 94598, USA Genome Institute, 2800 Mitchell Drive, Malnut Creek, CA 94598, USA ON Feb 17, 2000 this sequence version replaced gi:6686438.

**NOTE: This record contains 198 individual sequencing reads that have not been assembled into contrips. Runs of N are used to separate the reads and the order in which they appear is completely arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced.

**Hollowever, it should not be assumed that this clone will be sequenced to completion. In the event that the record is updated, the accession number will

** be preserved.
                                                               AC020870 256373 bp DNA linear HTG 17-FEB-2000 Mus musculus clone RP23-302015, LOW-PASS SEQUENCE SAMPLING. AC020870
                                                                                                              AC020870.2 GI:6984372
HTG; HTGS_PHASE0.
Mus musculus (house mouse)
Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Musinus; DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1000: contig of 752 bp in length gap of unknown length le04: contig of 648 bp in length gap of unknown length le04: contig of 604 bp in length gap of unknown length le04: contig of 698 bp in length gap of unknown length le09: contig of 897 bp in length gap of unknown length gap of unknown length gap of unknown length le09: contig of 679 bp in length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 822 bp in length
unknown length
g of 608 bp in length
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 817 bp in ler
unknown length
of 331 bp in ler
unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            972 bp in le
cnown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of 1
contig
gap of 1
contig
gap of 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9414:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10236:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10844:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11504:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12321:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12652:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14116:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12653
                               RESULT 13
AC020870/C
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
```

Db   77439   TGGCGTCTATTGCCGGCCTGGGGGATTCATATTGTGCTGGTTGGCGTGG   77380	RESULT 14 AR352333 AR	y Match Local S hes 414 202 1 262 61	CGACATTGTTCAGCGCAATTTTTGTGAATCTCACCAAAAGTATTGTGTTT CGACATTTGTTCCAGCGCGCATTTTTGTGAATCTCACCAAAAGTATTGTGTTTT CTGCGGCGCGTATTTCCGCAATTCATCATGCGCAACAGCCGCAACTGATGCTGTTTT CTGCGGCGCTATTTCCGCAATTCATCATGCGCCAACAGCCGCAACTGATGCAGTATATC CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAATATATT CTGGCGGCGCTCACCACTATTGTGGTCGATATTATTGTGATGATGATTACGCCACCCTTT GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATTACGGTTACGCCACCCTTT GTGCTCGGCGTCACCACTATTGTGGTCGATATTGTGATGATGATTACGCCACCCTTT GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATTACGGTTACGCCCCCTTT GTGCTCAACGCGTTACGGTCGATATAAAGGACCAAAAGCACGAATAAGATT GCTCAACGGATTGCTCTATGAATTAAAGGACCAAAAGAATAAGAATT GTCTAACGATTGCTCTATGAATTAAAGGACCAAAAGAATAAGAATT GCTCAACGGCTCACCACTATTAAAGGACCAAAAGAATAAGAATTAATT
46418 47815: contig of 1398 bp in length  47816 49310: contig of 1495 bp in length  49311 50304: contig of 1994 bp in length  50305 50848: contig of 994 bp in length  50305 50848: contig of 980 bp in length  51829: contig of 980 bp in length  51829: contig of 980 bp in length  51829: contig of 871 bp in length  52700 53365: contig of 871 bp in length  53366 54633: contig of 871 bp in length  54634 55470: contig of 871 bp in length  54634 55470: contig of 872 bp in length  55471 56358: contig of 837 bp in length  56359 56934: contig of 837 bp in length  56359 56934: contig of 837 bp in length  56359 56934: contig of 576 bp in length  56359 56934: contig of 576 bp in length  56359 56934: contig of 738 bp in length  56359 56934: contig of 738 bp in length  56359 56934: contig of 738 bp in length  57673 58319: contig of 6778 bp in length	* 58320 58529; Contig of 210 bp in length  * 58530 59083; Contig of 554 bp in length  * 59084 5906; Contig of 554 bp in length  * 59087 60826; Contig of 833 bp in length  * 60827 60826; Contig of 920 bp in length  * 60827 61084; Contig of 258 bp in length  * 61085 61762; Contig of 258 bp in length  * 61085 61762; Contig of 678 bp in length  * 61085 62713; Contig of 876 bp in length  * 62639 62713; Contig of 876 bp in length  * 62714 63593; Contig of 75 bp in length  * 62714 63593; Contig of 880 bp in length  * 63594 64039; Contig of 880 bp in length  * 63594 64039; Contig of 880 bp in length  * 63594 64039; Contig of 880 bp in length  * 63594 64039; Contig of 880 bp in length  * 63594 64039; Contig of 880 bp in length  * 63594 64039; Contig of 880 bp in length  * 63594 64039; Contig of 880 bp in length	gap of continuous and	Similarity 75.1%; Score 449.5% Del 2) Length 2583/ Similarity 75.7%; Pred: No. 4.5e-132; Conservative 0; Mismatches 17; Indels 5; ATGACCTTAGAATGGTGTTTGCCTACCTGCTGACATCGATTTTAACG

임 ò 셤

```
/grief of the coling of the co
SKWRGLTLQEKAAGIQDVTYQTDQQTLILNTANAYFKVLNAIDVLSYTQAQKEAIYRQ
LDQTTQRRWYGLVALTDVQNARAQYDTYLANBYTRANLIDNAVEELRQYTGNYYPELA
SLUVEHFKYDCKAVNALLKEAENBNLSLLQARLGQDLAREQIRQAQDGHLPTLNLTA
STGISDTSYSGSKYNASAQYDDSNMGQNKIGHNFSLELLYGGGNYNSQYKQAQYNFVGAS
EQLESAHRSYVQTYRSSFNXINASISSINAYKQAVVSAQSSLDAMEAGYYGQTTIVD
LYDATTLYDAKQQLANARYTYLINQLNIKYALGTLNBQDLLALNSTLGKPIPTSPES
VAPETPEQDAADGYNAHSAAPAVQPTAARANSNNGNPFRH"
1757. 2428
//gene="STY3365"
/gene="STY3365"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xrefe="GOA:QBZ3N7"
/db_xrefe="GOA:QBZ3N7"
/tanslation="WMWLITGLSZNN"
/translation="WMWLITGLSZNN"
RLGEALPRPQAIVUSAHWTIRGTGVTAMERPQTLHDFGGFPQALYDMHYPAPGSFAL
AGGEALPRPQALYALDKEAMGFDHGSWOYLIGN*PRADAIPTEM
GRKLATLRDBGVMLVASGNVVHNLETVFWHGONIPYWAASFRDFFVAALBGFPQALYDHGFPQPVQUGGPVDQ
GRKLATLRDBGVMLVASGNVVHNLETVFWHGONIPYPWAASFRDFFVKANLTWGGPVDQ
HPLVNYLQHEGGALSNPTPEHFLPLLYVLGAWDGKEPITIPVDGIEMGSISMLSVQVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement(3659, .4489)
/gene="STY3367"
/note="Crthblogue of E. coli ygiD (YGID_ECOLI); Fasta hit
to YGID_ECOLI (271 aa), 87% identity in 266 aa overlap"
/codon_Start=1
/codon_Start=1
/product="conserved hypothetical protein"
/product="conserved hypothetical protein"
/prodein_id="CAD07715.1"
/db_xref="id1:16504267"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene-mastanhit to YJFC_ECOLI (387 aa), 50% identity in 392 aa overlap orthologue of E. coli ygic (YGIC_ECOLI); Fasta hit to YGIC_ECOLI); Fasta hit to YGIC_ECOLI (386 aa), 94% identity in 386 aa overlap" (codon_erart=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1835. .1867
/gene="STY3365"
/note="P800013 Prokaryotic membrane lipoprotein lipid
2434. .357
/gene="STY3366"
/gene="STY3366"
/gene="STY3366"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="STY3368"
4588. .5361
/gene="STY3368"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Salmonella enterica subsp. enterica serovar Typhi
Salmonella enterica subsp. enterica serovar Typhi
Bacteria; Profeobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Salmonella.

L (bases 1 to 258050)
S Parkhill, J., Dougan, G., James, K.D., Thomson, N.R., Pickard, D.,
Wain, J., Churcher, C., Mungall, K.L., Bentley, S.D., Holden, M.T.G.,
Sebalhia, M., Baker, S., Basham, D., Brooks, K., Chillingworth, T.,
Sebalhia, M., P., Cronin, A., Davis, P., Davies, R.M., Dowd, L., White, N.,
Farrar, J., Feltwell, T., Hamlin, N., Haque, A., Han, T.T., Holroyd, S.,
Jagels, K., Krogh, A., Larsen, T.S., Leather, S., Woule, S., O'Gaora, P.,
Stevens, K., Whitehead, S. and Barrell, B.G.
Complete genome sequence of a multiple drug resistant Salmonella
enterica serovar Typhi CTIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | /gene="tolc"
| note="synonym: STY3364"
| force="synonym: STY3364"
| force="tolc"
| force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | force | forc
                                                                                                                                                                                                                                                                                                                                                                                        AL627278 258050 bp DNA linear BCT 04-JUL-2003 Salmonella enterica serovar Typhi (Salmonella typhi) strain CT18, Ocomplete chromosome; segment 14/20.
AL627278 AL513382 AL627278 1 GI:16504263
         301 GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Details of S. typhi sequencing at the Sanger Centre are available on the World Wide Web.

(URL, http://www.sanger.ac.uk/Projects/S_typhi/).

Location/Qualifiers

1. 258050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Salmonella enterica subsp. enterica serovar
Typhi"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission
Submitted (25-OCT-2001) Submitted on behalf of the Salmonalla
sequencing team, Sanger Centre, Wellcome Trust Genome Campus,
Hinxton, Cambridge CBIO 15A, UK
E-mail: parkhill@sanger.ac.uk
                                                                                                562 TICGGCTCGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCG 615
                                                                                                                                         361 TTCGGCTCGTTGTTTATGCTGGGAGCGCTGTTAGCATCGGCGAGGCATGCG 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /mol_type="genomic DNA"
/strain="CT18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:90370"
69._.1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (bases 1 to 258050)
Parkhill, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21534947
11677608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Notes:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                              RESULT 15
AL627278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
```

FEATURES

COMMENT

TITLE

```
/ ygenes = 1113, 0.0.
/ ygenes = 2007851.
/ ygenes = 2007851.
/ ygenes = 2007851.
/ yroduce="probable arylsulfate sulfotransferase"
/ produce="probable arylsulfate sulfotransferase"
/ produce="probable arylsulfate sulfotransferase"
/ yproduce="probable arylsulfate sulfotransferase"
/ yprotein id="CAD07717.1"
/ db_xref="GAD07717.1"
/ db_xref="GAD07777.1"
/ db_xref="GAD07777.1"
/ db_xref="GAD07777.1"
/ db_xref="GAD07777.1"
/ db_xref="GAD07777.1"
/ db_xref="GAD0777.1"
/ db_xref="GAD
                                                                                                                                                                                                                                                           /codon_start=1
/transl_table=11
/transl_table=11
/producT="putative membrane protein"
/protein_id="Cab07716_1"
/db_xref="G1:16504268"
/db_xref="G04:08XGR4"
/db_xref="S04:08XGR4"
/db_xref="S04:08XGR4"
/db_xref="S04:08XGR4"
/db_xref="S04:08XGR4"
/translation="MSVPLITILAGAATFICAFLGVLGQKPSNRVLAF9LGFAAGIM
LLISLWEMLPAALDTEGMSPVLGYGWFIIGLGYFGLDRLIPHAHPQDLVQKRQQPLP
GSIKRTAILLILGISLHNFPEGIATFVYTASSNLELGFGTAAVAHNIPEGLAYAGPV
YAATGSKRTAIFWAGISGMAEILGGYLAWLILGSLVSPIWAAINAPGNAGIMVALSVD
ELMPLAKEIDPNNNPSYGVLCGMSINGLSLVILQTIGIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="daba":
// note="grnonym: STY3371"
// note="grnonym: STY3371"
// note="grnonym: STY3371"
// gene="daba":
// note="grnonym: STY3371"
// note="grnonym: grnonym: 
/note="Orthologue of E. coli ygiE (YGIE_ECOLI); Fasta hit to YGIE_ECOLI (257 aa), 93% identity in 257 aa cverlap. Contains multiple possible membrane spanning hydrophobic domains"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="synonym: assT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6004. .7800
/gene="STY3370"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="STY3370"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7820. .8491
/gene="dsbA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LATKK"
7847. .8488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
```

```
247923
                                                                                                                                     247983
                                                                                                                                                                                                 248043
                                                                                                                                                                                                                                                             248103
                                                                                                                                                                                                                                                                                                                        248163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          248343
                                                                                                                                                                                                                                                                                                                                                                                     248223
                                                                                                                                                                                                                                                                                                                                                                                                                                              248283
                                                                                                        237
                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                          417
                                                                                                                                                                                                                                                                                                                                                       477
                                                                                                                                                                                                                                                                                                                                                                                                                   537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             597
                                                                                                                           247924 CIGGGIACGCICTITICGCGCTCGCTCATCGCTTTTGAAAITCTGAAAIGGGCTGGCGCG
                                                                                                                                                                                               247984 GCTTATCTTATCTGGCTGGGTATCCAGCAATGGCGGCGCGCAGGCGCTATCGATCTGCAT
                                                                                                                                                                                                                                                       248044 ACTCTCGCCCAGACGCAATCGCGGGTCGGCTGTTCAAACGGGGGATATTTGTCAATCTA
                                                                                                                                                                                                                                                                                                              248104 ACCAATCCCAAAAGTATTGTCTTTCTTGCCGCCCTGTTTCCGCAATTCATCATGCCGCAG
                                                                                                                                                                                                                                                                                                                                                                            248164 CAACCGCAACTGGCGCAGTACCTCATTCTCGGCGTCACCACGATTGTGGTGGATATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                     248224 GTGATGACCGGTTACGCCACGCTGGCGCACGCATTGCCGCCTGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             248284 CAGATGAAGGCGCTGAATAAAGCGTTTGGTTGTTTATGCTGGTAGGCGCGCCTCCTG
                                             GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG
                                                               GCTTCTATCGCCGGGCTCCAGACCGGGCTGGGGATACATATCGTACTGGTGGGCGTCGGA
                                                                                                                                                                                                                                                                                          ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAA
                                                                                                        TTGGG-ACGCTATTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCCAGGCGC
                                                                                                                                                                  GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA
                                                                                                                                                                                                                              TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                     CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT
                                                                                                                                                                                                                                                                                                                                                                                                                 GTGATGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248344 GCGTCGCCAAGACACGCG 248361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      598
                                             119
                                                                                                        179
                                                                                                                                                                    238
                                                                                                                                                                                                                              298
                                                                                                                                                                                                                                                                                          358
                                                                                                                                                                                                                                                                                                                                                       418
                                                                                                                                                                                                                                                                                                                                                                                                                 478
                247804
                                                                         247864
                                       8
                                                                 임
                                                                                              ઠે
                                                                                                                                g
                                                                                                                                                               ò
                                                                                                                                                                                       ద
                                                                                                                                                                                                                         8 8
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

completed: March 28, 2004, 16:45:00 he: 2577.83 secs Search cor Job time

1 AIGACCTIAGAAIGGIGGTITGCCTACCTGACATCGATCATTTTAACGCTGTCGCCA 60

61.7%; Score 379.2; DB 1; Length 78.0%; Pred. No. 2e-109; ive 0; Mismatches 133; Indels

Query Match Best Local Similarity 78.0 Matches 482, Conservative

 $\stackrel{>}{\circ}$ 엄 8

3; Gaps

Length 258050;

GGCTCTGGTGCAATCAACACTATGACCACCTCGACCACGGTTATCCGGCCG--GTG 118

86 75 64	5 4 0 2 2 0	1	335 36.8 37 36.8 36.8 36.8	ე დ. დ. ც ე 44 44 წ	J (J) (	ሳ የጎ የ	, 1	RESULT 1	94405 AAZ94405 81	AAZ94405;	18-JUL-200	E. coli rhi	L-valine;	Escherionia Key CDS		EP994190-A	19-APR-2000	20-SEP-199	13-0CT-1998	(AJIN ) AJ	Livshits V) Tokhmakova	WPI; 2000-; P-PSDB; AA	Novel RhtB Escherichia	L-alanine.	is ,	
	U		υυ		•			RESI	AAZ	Y Y	TO XX	EX.	** XX	ZXEL	T T T T T T T T T T T T T T T T T T T	XX	XX Qd	XX 49	XX XX	A A X	I B	* # #	XX Tq	TXX	: X &	
n 5.1.6 • Compugen Ltd.		Search time 306.314 Seconds (without alignments) 8529.292 Million cell updates/sec	_1171 tagcatcggcgaggcatgcg 615		residues	parameters: 6747726								results predicted by chance to have a to the score of the result being printed, of the total score distribution.	ES	8 :	ы оо	Aasy3395 DNA encod Aas89415 DNA encod	Aah84646 E. coli g Acal8626 Prokaryot	Aca36103 Prokaryot Aca36107 Prokaryot Aca32157 Prokaryot		ACAL3399 Prokaryot Aa899412 DNA encod Aah84479 E. coli g	Aa889410 DNA encod Aa893398 DNA encod Aca52910 Prokaryot	Aa893397 UNA encod Aca42760 Prokaryot Aca45784 brokaryot	Acd71734 E. coli K Acd71736 E. coli K	Acd71735 E. coli K
GenCore version Copyright (c) 1993 - 2004	OM nucleic - nucleic search, using sw model	Run on: March 28, 2004, 12:14:43 ;	Title: US-09-847-392-1_COPY_557_1 Perfect score: 615 Sequence: 1 atgaccttagaatggtggtt	Scoring table: IDENTITY_NUC Gapop 10.0 , Gapext 1.0	Searched: 3373863 segs, 2124099041 r	Total number of hits satisfying chosen par	Minimum DB seq length: 0 Maximum DB seq length: 200000000	Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries	·		4: geneseqn2001as:* 5: geneseqn2001bs:*	6: geneseqn2002s:* 7: geneseqn2003as:* 8: geneseqn2003hs:*	o: genesequidousos:* 9: genesequidousos:* 10: genesequidouse:*	Pred. No. is the number of results p score greater than or equal to the s and is derived by analysis of the to	* Query	Score Match Length DB	615 100.0 1200 3 615 100.0 1231 3	486.2 79.1 2216 5	414 67.3 417 4 414 67.3 417 7 370 2 61 7 621 7	375 61.0 618 7 357.4 58.1 618 7	10 344.8 56.1 623 7	259 42.1 259 / 248.6 40.4 1884 5 207.4 33.7 263 4	C 15 175 28.5 274 5 AASB9410 16 167.8 27.3 516 5 AAS93398 17 149.8 24.4 618 7 ACA52910	112.4 18.3 630 7 104 16.9 630 7	100 16.3 100 7	100 16.3 100 7

24 86.4 14.0 633 7 ACA43829 25 75.4 10.5 627 7 ACA27048 26 75.4 10.5 543 7 ACA208490 27 64.6 10.5 543 7 ACA208490 28 58.8 9.6 633 7 ACA20819 31 39.8 6.5 987 6 ABK84660 33 39.8 6.5 1083 9 ADC51928 34 37.2 6.0 633 8 ADA31395 25 36.8 6.0 1377 4 ABL28479 25 36.8 6.0 2000 7 ADA71938 37 36.6 6.0 2000 7 ADA71938 38 35.4 5.8 10.8 4 AAR79862 38 35.4 5.6 5.6 538 6 ABK79655 40 34.4 5.6 283 6 ABK795556 44 33.8 5.5 987 8 ACC79865 44 33.8 5.5 987 8 ACC79865 44 33.8 5.5 987 8 ACC79865	Aca43829 Prokaryot	Aca27048 Prokaryot	Ada29490 DNA encod	Aca20819 Prokaryot	Aca23772 Prokaryot	Adb68842 Minority	Abk94661 G protein	Adc51928 Mouse TGR	Abk94660 G protein	G	Ada31395 DNA encod	Abl28479 Drosophil	Abl28478 Drosophil	ω	a	Abk77410 Bacillus	Abn16733 Human ORF	Abk94565 G protein	Abt33314 GPR7 liga	Acc79865 Rat TGR26	Adc51916 Rat GPR8-	Adb75566 Prostate
24 86.4 14.0 633 26 27 64.6 13.0 62.7 28 28 8 65.3 29 8 6.3 31 39.8 6.5 96.5 96.7 35.8 35.8 6.0 53.3 36.8 6.0 53.3 37.2 6.0 53.3 37.2 6.0 53.3 37.2 6.0 53.3 37.2 6.0 53.3 37.3 5.5 5.5 98.7 44.3 33.8 5.5 98.7 45.3 33.8 5.5 98.7 45.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.3 33.8 5.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 45.5 5.5 98.7 5.5 5.5 98.7 5.5 5.5 98.7 5.5 5.5 98.7 5.5 5.5 98.7 5.5 5.5 98.7 5.5 5.5 98.7 5.5 5.5 98.7 5.5 5.5 98.7 5.5 5.5 5.5 98.7 5.5 5.5 5.5 98.7 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5	ACA43829	ACA27048	ADA29490	ACA20819	ACA23772	ADB68842	ABK94661	ADC51928	ABK94660	ADC51926	ADA31395	ABL28479	ABL28478	ADA71938	AAF79862	ABK77410	ABN16733	ABK94565	ABT33314	ACC79865	ADC51916	S
25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1	1	ω	7	۲.	σ	9	σ	9	σ	ω	4	4	7	4	w	w	v	1	ထ	σι	σ
4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	633	627	663		ᠬ	m	æ	987	1083	1083	633	1377	5313	2000	1028	357	283	987	987	987	987	3292
######################################	14.0	13.0	12.3	10.5										-	٠.							υ υ
	86.4	80	75.4	64.6	58.8	42.4	39.8	φ.	φ.	φ.	۲.		9	36.6	'n.	34.6	34.4	33.8	ъ.	-		
υ υυ υ	24					59	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
						υ						υ	U									U

## ALIGNMENTS

```
Location/Qualifiers
557. 1171
/*tag= a
/note= "a DNA sequence corresponding to the coding region
(minus the stop codon) is specifically claimed in Claim
3".
                                                                                                                                                                             e resistance; rhtB gene; L-homoserine; L-alanine; L-isoleucine;
L-threonine; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B protein, useful for generation of L-homoserine resistance in ia bacteria and large-scale production of e.g. L-homoserine and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  he DNA sequence the novel rhtB gene of Escherichia coli K-12. gene maps at 86 min on the E. coli chromosome. The gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VA, Zakataeva NP, Aleoshin VV, Belareova AV;
a IL;
                                                                                                                                      htB gene imparting homoserine resistance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page 10-11; 14pp; English.
standard; DNA; 1200 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98; 98RU-00118425.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99; 99EP-00118581.
                                                                                      00 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JINOMOTO CO INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         )-273530/24.
\AY79298.
                                                                                                                                                                                                                                                          ia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A2.
```

```
1156
                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccecaactearecaeraracerecreecerecaecacararrerecreateararrarere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        616
                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                 676
                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                            736
                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                        796
                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                   856
                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG-540
                                                                                                                                                                                                                9
ATGACCTTAGAATGGTGGTTTGCCTACCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                       GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTAAAGTGGGCAGGCGCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                 TACTTGATTTGGCTGGGATCCAGCAGTGGCGCGCCGCTGGTGCATTGACCTTAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATCCCAAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGCAACTGATGCAGTATATCGTCGGCGTCACCACTATTGTGGTCGATATTATTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Angaadeccricaanaacannincecricerierrianecrecesececretrandea
                                                                                                                                                                                                                ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                          GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT
                                                                                                                                                                                                                                                                                                                     GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT
                                                                                                                                                                                                                                                                                                                                                 GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGCT
                                                                                                                                                                                                                                                                                                                                                                                           TACTTGATTTGGCTGGGAATCCAGCAGTGGCGCCGCCGCTGGTGCAATTGACCTTAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAG
                                                                                                                                                                                           Gaps
                                                                                                                                                                                         ,
0
                                                                                                                                                                    Length 1200;
                                                                                                                                              Sequence 1200 BP; 285 A; 309 C; 305 G; 301 T; 0 U; 0 Other;
                                                                                                                                                                                         Indels
                                                                                                                                                                 / Match 100.0%; Score 615; DB 3; Local Similarity 100.0%; Pred. No. 2e-193; les 615; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             coli L-homoserine resistance gene, rhtB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rcecceaccarces 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGGCGAGGCATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAA48442 standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1097
                                                                                                                                                                                                                                     557
                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                617
                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                           677
                                                                                                                                                                                                                                                                                                                                                                       737
                                                                                                                                                                                                                                                                                                                                                                                                                 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                             857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1157
                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAA48442
                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAA48442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
  g
                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        XXXXXX
                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
```

```
The present sequence is the L-homoserine resistance gene, rhtB, from Escharichia coil. This sequence may be used to impart L-homoserine resistance on E. coil bacteria, which would be useful for producing a high yield of L-homoserine. L-homoserine resistance means that the bacteria will be able to grow on a minimal medium containing L-homoserine at a concentration at which the corresponding wild-type strain would not grow. Since the transformed bacteria can grow on the minimal medium, it can synthesise L-homoserine, which accumulates. The accumulated amino present invention may also be used to synthesise L-threonine, L-valine and L-leucine at increased levels
                                                                                                                                                                                                                                                                                                                                                                                                                ů
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                             Novel Escherichia bacterium having enhanced L-threonine resistance due enhanced RhtC protein activity, used to produce L-threonine, L-homoserine, L-valine and L-leucine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               557 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGACGCTATTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGGCAGGCGCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     737 GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACTTGATTTGGCTGGGATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  797 TACTIGATITIGGCIGGGAATCCAGCAGIGGCGCGCCGCTGGIGGAATIGACCTIAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCCTGGGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             crescereraereaeresearraerrerreaeseseseserrrrarreraese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          617 egenengenecaancaacacnangaccaccnoecnoaaccaceennanceeecceereec
           L-homoserine resistance; L-homoserine synthesis; rhtB; L-threonine;
L-valine; L-leucine; ds.
                                                                                                                                                                                                                                                                                                                               Tokhmakova
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 3; Length 1231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1231 BP; 291 A; 319 C; 311 G; 310 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                 Belareva AV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 615; DB 3;
100.0%; Pred. No. 2e-193;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                 Zakataeva NP, Aleshin VV,
                                                                                       Location/Qualifiers
557, 1174
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 4; Page 12-13; 24pp; English
                                                                                                                                        /product= "RhtB"
                                                                                                                                                                                                                                    99EP-00125406
                                                                                                                                                                                                                                                                  98RU-00123511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 100.
Matches 615; Conservative
                              L-valine; L-leucine;
                                                                                                                                                                                                                                                                                                (AJIN ) AJINOMOTO KK
                                                                                                                                                                                                                                                                                                                                                             2000-414602/36.
                                                              coli.
                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; AAY99597
                                                                                                                                                                                                                                                                                                                               Livshits VA,
                                                                                                                                                                                                                                    20-DEC-1999;
                                                                                                                                                                                                                                                                  23-DEC-1998;
                                                            Escherichia
                                                                                                                                                                       EP1013765-A1
                                                                                                                                                                                                     28-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                           Key
d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
```

ö

ന

'n

117

9

236 240 356

416

476

300

```
301 ATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCT 360
diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and to produce other types of dependent on DNA and amino acid sequences. AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention. Note: The sequence data for this patent dinot appear in the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                         61 AGGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCGCGGCGCGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 GGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 CACCAATCCCAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGTCGCGCA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481 rereardarcecrracecercerrecreaacearrecrearearrarearraaaeaaceaaa 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541 GCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGGGGCGTGTT 600
                                                                                                                                                                                                                                                                                                      1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAA-CGCTGTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            237 GGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAA
                                                                                                                                                                                                                                                                                                                                          1 Argaccrragaarggregrreccraccrecreargarcarcarrraagcccgrrccc
                                                                                                                                                                                                                                                                                                                                                                                   60 AGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTAT--CCGGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178 GTT-GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 GTTGGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTTGAAGTGGGCCAGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      357 CACCAATCCCAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATGACGCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   417 ACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               477 IGIGAIGAICGGIIACGCCACCCIIGCICAACGGAIIGCICIAIGGAIIAAAGGACCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTT
                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human, chromosome mapping, gene mapping; gene therapy, forensic;
food supplement, medical imaging, diagnostic; genetic disorder;
                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                        Length 622;
                                                                                                                                                                                  Sequence 622 BP; 123 A; 152 C; 172 G; 175 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA encoding novel human diagnostic protein #25219
                                                                                                                                                                                                                    Query Match 92.4%; Score 568.2; DB 5; Best Local Similarity 98.1%; Pred. No. 5.2e-178; Matches 607; Conservative 0; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCATCGGCGAAGCATGCG 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAS89415 standard; cDNA; 2216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              597 AGCATCGGCGAGGCATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ASS 9415/C

1D AASS 9415/C

1D AASS 94

XX AASS 94

XX DT 113-FEB

XX DE DNA en

XX Human,

XM Human,

XM Human,

XM Human,

XM KW Human,
      888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                           1036
                                                                                                                                                                                                                                                                                   1097 ATGAAGGCGCTGAATAAGATTTTTCGGCTCGTTGTTTTTGCTGGGGGGCGCTGTTAGCA 1156
                                                                                                                                                                                                                                                              600
                                                             976
                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to isolated polymucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain recaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polymucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving (II). (II) is polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders polypeptide and polymucleotide sequences have applications in
                                                                                                                             CGGCAACTGATGCAGTATATCGTGCTCGGGGTCACCACTATTGTGGTCGATATTGTTGTG
                                                                                                                                                                               ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG
                                                                                                                                                                                                                    1037 Argarcegraaccacccraeccarcearcegarrecraregarraaaggaccaaagcae
                     AATCCCAAAAGTATTGTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAG
                                                         AATCCCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAG
                                                                                                 CCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTGTG
                                                                                                                                                                                                                                                            541 ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e mapping; gene mapping; gene therapy; forensic; medical imaging; diagnostic; genetic disorder; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA encodiný novel human diagnostic protein #29199.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; SEQ ID NO 29199; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВР
                                                                                                                                                                                                                                                                                                                                                                    TCGGCGAGGCATGCG 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAS93395 standard; cDNA; 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-MAR-2000; 2000US-00540217, 23-AUG-2000; 2000US-00649167.
                                                                                                                                                                                                                                                                                                                                          TCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-639362/73.
P-PSDB; ABG29208.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                food supplement;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drmanac RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11~OCT-2001
                                                         917
                                                                                                                                     977
                                                                                                                                                                             481
                                                                                                 421
                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вb
                                                                                                 ð
                                                                                                                                     임
                                                                                                                                                                           ò
                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                        ò
```

```
TGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCG----CGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (ELIT-) ELITEA PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ohlsen K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2001-335933/35.
P-PSDB; AAG98975.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200134810-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-MAY-2001
                                                                                                                                                                                                                                                                                    1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAH84646;
                                                                                                                                                          1664
                                                              358
                                                                                                                          418
                                                                                                                                                                                         477
                                                                                                                                                                                                                                                      537
                                                                                                                                                                                                                                                                                                                                                   1484
                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
AAH84646
                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                     g
                                                                                                                                                                                         ò
                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                   셤
                                                        ð
                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to isolated polymuclectide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PGK) primers, oligomers, and for chomosome and gene mapping, and in recombinant production of (II). The polymuclectides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal cutivity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful for treating disorders of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polymuclectide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations and to produce other types of data and products dependent on DNA and amino acid sequences. Assetig7-AAS94564 represent novel human diagnostic coding sequences. Assetig7-AAS94564 represent novel human diagnostic coding sequences. Assetig7-AAS94564 represent novel human diagnostic coding sequences. Assetig7 from MIPO at the sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from MIPO at the sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2084 CCTTAGAAAGGGGGTTGCCCACCCGCGACATTGATCTTTTTTTAGCCCGTTCCCCAGTTT 2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1964 CTATTGCTGGGCTTCAGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGTTGG 1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1844 ACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCTTGACTTAAATCGC 1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGGTTGGCGTGGGGTT-G 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .904 GGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGAAGTGGGCAGGCCCGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2024 CTGGCCCAATCACCACTATGCCCCCTCGCTCAACCACGGTTATCGCGGCGGGGGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            242 ACTIGATITIGGCIGGGAAICCAGCAGIGGCGCCGCIGGIGCAAIIGACCTIAAAICGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65 CTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTAT--CCGGCCGGTGGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8; Gaps
                                                                                                                                                                                                                                                                                    New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Pest Local Similarity 91.0%; Pred. No. 1.8e-150;
Matches 563; Conservative 0; Mismatches 48; Indels 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2216 BP; 518 A; 562 C; 639 G; 497 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                   Claim 1; SEQ ID NO 25219; 103pp; English
                                                                                           30-MAR-2001; 2001WO-US008631
                                                                                                                          31-MAR-2000; 2000US-00540217,
23-AUG-2000; 2000US-00649167,
                                                                                                                                                                                                        Drmanac RT, Liu C,
                                                                                                                                                                                                                                     WPI; 2001-639362/73
P-PSDB; ABG25228.
                                                                                                                                                                         HYSE-) HYSEQ INC
                            WO200175067-A2
 Home sapiens
                                                             11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182
ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
1665
                                                                                                                                                                                                                                                                                                                                                                  1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAH84373 to AAH84499 represent Escherichia coli growth and proliferation related DNA sequences (I). AAH84500 to AAH84670 encode the E. coli growth and proliferation related proteins given in AAG989078 and AAG98830 to AAG98999. (I) can be used as potential targets for the generation of new antimicrobial agents, and for identification of compounds which interact with the gene products of (I). In addition the expression of (I) and the generate reagents and soreen small molecule libraries or other candidate compound libraries for compounds that can be further developed to yield novel antimicrobial compounds. In addition, nucleic acid probes complementary to (I) that are specific for particular species of microorganisms can be used to identify particular microorganism species in clinical specimens, therefore, providing a rapid and dependable method
1784 redecercracicaaricecerceacarrinericareacececacarririridaarerere 1725
                                                                                        417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel nucleic acids that inhibit Escherichia coli proliferation, useful for screening for homologous genes and for designing expression vectors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E. coli growth and proliferation related coding sequence SEQ ID NO:274.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGATGAAGGCGCTGAATAAGATTTTTCGGCTCCTTGTTTTATGCTGGTGGGAGCGCTTGTT
                                                                                                                                                                       1724 ACCATTCCAAAAAGTATTGTGTTTCTGGGGGGGGTATTTCCGGCAATTCATGTGCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1604 rergargarceerraceccaccerrecreaecearrecreraresarrasaseae
                                                                                                                                                                                                                                                                              CAGCCGCAACTGATGCAGTATATCGT-GCTCGGCGTCACCACTATTGTGGTCGATATTAT
                                                                                                                                                                                                                                                                                                                                                             caeccecaacrearecagrararesrescresecercaccacrarreresresararrar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGAGCGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Escherichia coli, growth, proliferation, microbial, antimicrobial, bacterial infection, microorganism, ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zyskind J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 9; Page 351; 522pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCATCGGCGAGGCATGCG 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       597 AGCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-NOV-2000; 2000WO-US030950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0164415P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAH84646 standard; DNA; 417
```

Mon Mar

```
ö
by which to identify the causative agents of a bacterial infection. Also, antibodies generated against proteins translated from MRNA transcribed from proliferation-required sequences can also be used to screen for specific microorganisms that produce such proteins in a species-specific anner. AAH84371 and AAH84670 represent sequencing primers used in the isolation of E. coli growth and proliferation related sequence, which are used in an example from the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                    261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                       09
                                                                                                                                                                                                                                                                                                                                                                                              GTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCTTACTTGATTTGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIGATIGCGITIGAAGIGITIGAAGIGGCCAGGCGCGCCTIACTIGATITIGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCAGTGGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGCAGTATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGCGCGCTATTTCCGCAATTCATCGCCGCAACAGCCGCAACTGATGCAGTATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGCTCGGCGTCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCCTGAATAAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCAGTGGCGCCCCCTGGTGCATTGACCTTAAATCGCTGGCCTCTAACTCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGACATITIGITCCAGCGCGCAGITITIGIGAATCTCACCAATCCCAAAAGTATIGIGITIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Grécriceccercacrarreregregararrarrerearearcecrracecerr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rrcecricirina recreatede accidentaria e a recentaria e a reconstanta e a recon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zyskind
                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        proliferation;
                                                                                                                                                                                                                                                                                  Length 417;
                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ą
                                                                                                                                                                                                                          Sequence 417 BP; 87 A; 96 C; 116 G; 118 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ohlsen
                                                                                                                                                                                                                                                                                  Score 414; DB 4; Le
Pred. No. 7.6e-127;
                                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Antisense; ds; prokaryotic essential gene; cell drug design; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                쏪
                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Haselbeck
                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 100.0%; Pr
Matches 414; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Prokaryotic essential gene #283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Malone C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-MAR-2001; 2001US-00815242.
06-SEP-2001; 2001US-0048893.
25-OCT-2001; 2001US-03429819.
08-FEB-2002; 2002US-00072851.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2002US-0362699P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zamudio C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACA18626 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-MAR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        03-0CT-2002
                                                                                                                                                                                                                                                                                                                                                                                              202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACA18626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACA18626
  888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid, (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable (6) inhibiting cellular proliferation, (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway required for proliferation or the activity of a gene in an operon required for cellular proliferation of the proliferation, or that inhibits cellular proliferation (6) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation required for cellular proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a pathway in which a proliferation-required gene or its gene product lies overaxpressed or underexpressed; (10) profiling a compound, sactivity; (11) a culture comprising strains in which the gene product is overaxpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the confidential persent or soreening for homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. preumoniae or P. aeruginosa. The present sequence is one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in cell company of the printed specification, but was obtained in cellular days.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ô
                                                                                                         New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGATTGCGTTTGAAGTGTTGAAGTGGCCAGGCGCGCCTTACTTGATTTGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGACATITIGITCCAGCGCGCGCAGTITITGTGAATCTCACCAATCCCAAAAGTATTGTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCGGCAACTGATGTATATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGATTGCGTTTGAAGTGTTGAAGTGGGCCAGGCGCGCCTTACTTGATTTGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAAATCCCCAAAAGTATTGTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT
                                                                                                                                                                                                                                           invention relates to an isolated nucleic acid comprising any one
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
    臣
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
    Хu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 417 BP; 87 A; 96 C; 116 G; 118 T; 0 U; 0 Other;
    Forsyth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67.3%; Score 414; DB 7; Le
100.0%; Pred. No. 7.6e-127;
ive 0; Mismatches 0;
    ъ,
                                                                                                                                                                                                 Claim 14; SEQ ID NO 6496; 1766pp; English
    Yamamoto
    Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best_Local Similarity 100.
Matches 414; Conservative
  Trawick JD,
                                              WPI; 2003-029926/02
                                                                 P-PSDB; ABU14756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
Ď,
  Wall
  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
```

σ

```
Antisense; ds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACA36103
                                                                                                                                                                                                                                                                                                                          119
                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    598
                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACA36103
                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACA36103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              00000x8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the 613 antisense sequences given in the specification where expression of the mucheic acid inhibits proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the mucheic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid, encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the activity of against an operan required for the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operan required for proliferation or the activity of a gene in an operan required for required for proliferation, (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway to which a proliferation or the biological pathway in which a proliferation required gene or its gene product lies or agene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound, a activity; (11) a culture comprising strains in which the gene product is overexpressed of the strains is present in a culture or collection of strains; or (12) identifying the target of a compound that inhibits the contract of a compound that inhibits the contract of a compound that inhibits the compound that inhibits the contract of a compound that inhibits the contract of a compound that inhibits the compound that inhibits the contract of the strains is the compound that inhibits the contract of the strains is the compound that inhibits the contract of the strains is present in a culture or collection of the contract of the strains is the compound that inhibits the contract of the contract of the compound that inhibits the contract of the contract of the compound that inhibits the contract of the c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               strains, or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids are useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium. K. pneumoniae or P. aeruginosa. The present sequence is one of the target
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    invention relates to an isolated nucleic acid comprising any one of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zyskind JW;
Xu HH;
TTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCG 615
                  361 TICGGCTCGTTGTTTATGCTGGTGGAGCGCTGTTAGCATCGGCGAGGCATGCG 414
                                                                                                                                                                                                                                                       ds; prokaryotic essential gene; cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 14; SEQ ID NO 39598; 1766pp; English
                                                                                                                                                                                                                        Prokaryotic essential gene #33385
                                                                                                                  BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g, ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                              21-MAR-2001; 2001US-00815242.
06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-0342923P.
08-FEB-2002; 2002US-0362899P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Malone (
Carr G
                                                                                                                                                                                                                                                                                                                                                                                                             21-MAR-2002; 2002WO-US009107
                                                                                                                    621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (ELIT-) ELITRA PHARM INC
                                                                                                                  DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Zamudio C,
Trawick JD,
                                                                                                                                                                                     (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2003-029926/02
P-PSDB; ABU47858.
                                                                                                                  ACA51728 standard;
                                                                                                                                                                                                                                                                            drug design; gene
                                                                                                                                                                                                                                                                                                       Salmomella typhi.
                                                                                                                                                                                                                                                                                                                                          40200277183-A2
                                                                                                                                                                                   19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                              03-OCT-2002
                                                                                                                                                                                                                                                         Antisense;
562
                                                                                                                                                   ACA51728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wang L,
Wall D,
                                                                                                  ACA51728
                                                                                                                                     ઠ
                             a
```

```
'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                      178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                  scriciarceccesecrecasacesecresesaracarateraceraseceses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGGCGCCGCTGGTGCAATTGACCTTAAA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acrerceceagacecaárecegegeregenerierreaacegegenarriereaarena 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                597
                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                    9
prokaryotic essential genes. Note: The sequence data for this patent did
not form part of the printed specification, but was obtained in
electronic format directly from WIPO at
ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                      GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGGG-ACGCTATTTTCCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ciegeracecictiticececteateercaticectriidaaaricigaaargeeece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            caaccecaacreececadraccrearrereececercaccaccarrereereararaarr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                    Areacertreaaresrestrescerareracioacercaaerererasreseretreces
                                                                                                                                                                                                                                                                                                                                   --GTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT
                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCCGGCCG
                                                                                                                                                                                                 m
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         essential gene; cell proliferation;
                                                                                                                                                       Length 621;
                                                                                                            T; 0 U; 0 Other;
                                                                                                                                                                                                 Indels
                                                                                                                                                  Score 379.2; DB 7;
Pred. No. 3.5e-115;
0; Mismatches 133;
                                                                                                            Sequence 621 BP; 121 A; 170 C; 171 G; 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Prokaryotic essential gene #17760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               界
                                                                                                                                                       Query Match
Best Local Similarity 78.0%;
Matches 482; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATCGGCGAGGCATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTCGGCAAGACACGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prokaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard; DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   drug design; gene
```

Mon Mar 29 IU:1/:06 2004

us-U9-84/-392-1\_copy\_b5/\_11/1.rng

21-MAR-2001; 2001US-00815242. 06-SEP-2001; 2001US-00948993. 25-OCT-2001; 2001US-0342923P. 08-FEB-2002; 2002US-0072851. 06-MAR-2002; 2002US-0362699P. 21-MAR-2002; 2002WO-US009107 (ELIT-) ELITRA PHARM INC Zamudio C, Trawick JD, WPI; 2003-029926/02. P-PSDB; ABU32233. 03-OCT-2002 'n, Wang | Wall | 

New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.

Zyskind JW; Xu HH;

Ohlsen KL, Forsyth RA,

Haselbeck R, Yamamoto R,

Malone C, Carr GJ,

Claim 14; SEQ ID NO 23973; 1766pp; English

The invention relates to an isolated mucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibites proliferation of the mucleic acid inhibites proliferation of included are:

(1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense conclider acid; (2) an bost cell containing the vector; (3) an isolated continued to polypeptide; (5) producing the polypeptide; (6) inhibiting calcular proliferation or the activity of a gene in an operon required for the proliferation or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (7) identifying a compound that influences the activity of required for proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies cor a gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene product is overexpressed or underspressed; (12) determining the extent of compound's activity; (11) a culture comprising strains in which the gene product is overexpressed or underspressed; (12) determining the extent of conficeration of an organism. The antisense mucleic acids required for proliferation to isolate candidate molecules for rational drug discovery programs, or for screening for homologous nucleic acids required for proliferation to isolate candidate molecules for rational drug discovery programs. Or for screening for homologous nucleic acids required for proliferation in calls other than S. aureus, S. typhimucle for required for proliferation in calls other than S. aureus, S. typhimucle for not format directly from WIPO at the sequence data for this patent did one terminal genes. No electronic format directly from WIPO at ftp.wipo.int/pub/published\_pct\_sequences

Sequence 618 BP; 108 A; 182 C; 179 G; 149 T; 0 U; 0 Other;

5 9 1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA 60 1 ATGACCATTGAGTGGTGGTTCGCCTACCTGCTGACATCAATTATTCTCAGCCTGTCGCCG Query Match 61.0%; Score 375; DB 7; Length 618; Best Local Similarity 77.6%; Pred. No. 8.6e-114; Matches 479; Conservative 0; Mismatches 135; Indels 셤 ö

à

121

ВЪ δ

g

screening

New antisense nucleic acids, useful for identifying proteins or scre for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.

WPI; 2003-029926/02. P-PSDB; ABU28287.

240 537 237 297 300 357 417 420 477 480 361 ACCAATCCCAAAAGCATTGTTTTTTTTGGCCGCCCTGTTTCCGCAGTTTATCCTGCCGCAC GIGATGATCGGTTACGCCACCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG GTGATGATTGGCTATGCGACCCTGGCGAGCGCATTTCCGCATGGATCAAAGGGCCAAAG 538 CAGANGAAGGGGTGAANAAGATTTTGGGCTGGTTGTTTATGCTGGTGGGGGCGCTGTTA CINTATGCTGGTGGGGGCGCTGTTA CAGATGAAGAAGAACAAAAGTCTTTGGTTCACTGTTTATGCTGGGGGGCGCTGGTCTGCTGTTATACTGCTGGGGGCGCTGGTCT 181 CTCGGCACTCTCTTCTCCCCGCTCGGTGCTGGCCTTTTGAGGTGCTGAAATGGGCCGGCGCC 298 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 301 Acidente de caracides de consecuente en consecuencia de co ACCAATCCCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAA CAGCCGCAGGTGATATCTCGGTTCTGGGCGTCACCATCGTCGTCGTCGTATTCATT CAGCCGCAACTGATGCAGTATATCGTGCTCGCCGTCACCACTATTGTGGTCGATATTATT Zyskind JW; Xu HH; proliferation; Haselbeck R, Ohlsen KL, Yamamoto R, Forsyth RA, Antisense; ds; prokaryotic essential gene; cell drug design; gene. Prokaryotic essential gene #13814. Malone C, Carr GJ, 614 decredecedechide 617 21-MAR-2001; 201US-00815242. 06-SEP-2001; 201US-00948993. 25-CCT-2001; 2001US-0342923P. 08-FEB-2002; 2002US-0362699P. 21-MAR-2002; 2002WO-US009107 ACA32157 standard; DNA; 618 19-JUN-2003 (first entry) (ELIT-) ELITRA PHARM INC. Enterobacter cloacae. Zamudio C, Trawick JD, WO200277183-A2. 03-CCT-2002 ACA32157; 481 238 241 358 418 421 478 υŗ Wang RESULT 9 ACA32157 g & d d 장 유 ò g ઠે 8 8 8 8 ઠે

ID NO 20027; 1766pp; English. Claim 14; SEQ

00:/T:OT 67

ECI EST

copy\_cc\_vii.rng

T-765-/58-60-80

The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibites proliferation of the nucleic acid inhibites proliferation of promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the nucleic acid; (2) an bost cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producting the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or the activity of a gene in an operon required for proliferation, or that inhibits cellular proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway or required for proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation. required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an organism aces; (9) manufacturing an antibiotic; (10) profiling a compound; a activity; (11) a culture comprising strains in which the gene or organism aces; (9) manufacturing an antibiotic; (10) profiling compound; a crivity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) determining the extent to work hand; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, C. prewonniae or P. aeruginosa. The present sequence is one of the target of compound in the printed specification, but was obtained in cell or the printed specification, but was obtained in cell or the printed specification, but we sequences in the compound of the

Sequence 618 BP; 106 A; 176 C; 183 G; 153 T; 0 U; 0 Other;

3; Gaps Query Match 58.1%; Score 357.4; DB 7; Length 618; Best Local Similarity 75.9%; Pred. No. 6.1e-108; Matches 468; Conservative 0; Mismatches 146; Indels 3

118 181 CTGGGGACCTGTTCTCCCGCTCCGTGCTTTGAGGTGCTGAAATGGGCCGGGGCA 240 237 CAGCCTCAGGTGATGCAGTACGTGGTGCTGGGCGCGACCACTATTATCGTCGATATCATC 480 GCGTCTATTGCTGGGCTTCAGACCGGACTGGGGATTCATATTGTGCTGGTTGGCGT-GGG 177 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCCAATTGACCTTAAA 297 ACCAATCCCAAAAGTATTGTGTTTTTGGGGGGGGCGTATTTCGGCAATTCATCATGCCGCAA 417 Accaaccaaaaaaaaararcrccrccccccararrccacaarrarcarrarcacar 420 CAGCCGCAACTGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT 477 GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG 537 9 9 AIGACCTTCGAATGGTGGTTCGCCTACCTGCTGACATCCATTATCCTCAGCCTTTCTCCG GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTA--TCCGGCCGGTG 121 GCATCGATTGCCGGTTTGCAGACCGGGCTGGGTATTCATATTGTGCTGGTCGGGATCGGT 1 ATGACCTTAGAATGGTGTTTGCCTACCTGACATCGATCATTTTAACGCTGTCGCCA GITGGGACGCTATTTTCCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCCAGGCGCG 61 61 119 178 238 241 298 361 418 358 421 B ò g ò 셤 ઠે 셤 ò g g ò g ò ò g

The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibits proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid, mucleic acid, (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding antisense nucleic acid; (4) an antibody capable of specifically binding closh proplifieration or the activity of a gene in an operon required for proliferation or that has an activity against a biological pathway required for proliferation, or that that inhibits cellular proliferation; (7) identifying a compound that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological central proliferation or the think in a proliferation or the biological pathway in which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a companism acts; (9) manufacturing an antibiotic; (10) profiling a compusion or comprising frains in which the gene product is solverexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of 540 New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs. GIGATGATTACGCTACGCTGGCGCACGCTAAAAGGCCTGGATTAAAGGCCTAAG Zyskind JW; Xu HH; prokaryotic essential gene; cell proliferation; Ohlsen KL, Forsyth RA, Haselbeck R, Yamamoto R, Claim 14; SEQ ID NO 36679; 1766pp; English. Prokaryotic essential gene #30466. Malone C, Carr GJ, 598 GCATCGCCGAGGCATGC 614 21-MAR-2001; 2001US-00815242. 06-SEP-2001; 2001US-00948993. 25-OCT-2001; 2001US-0342923P. 08-FEB-2002; 2002US-0362699P. 21-MAR-2002; 2002WO-US009107. ACA48809 Btandard; DNA; 623 **d**carcadcacarcacec (first entry) (ELIT-) ELITRA PHARM INC. Zamudio C, Trawick JD, Salmonella paratyphi WPI; 2003-029926/02. P-PSDB; ABU44939. drug design; gene. WO200277183-A2 Antisense; ds; 19-JUN-2003 03-OCT-2002 481 538 601 ACA48809; Wang L, Wall D, ACA4880110
ACA4880110
ACA4880110
ACA4880110
ACA4880110
ACA48801110
ACA48801110
ACA48801110
ACA48801110
ACA48801110
ACA48801110
ACA48801110
ACA48801110
ACA48801110
ACA6880110
AC 유 장 셤 셤 à

proliferation

prokaryotic essential gene; cell

drug design; gene

WO200277183-A2

dB;

Zyskind Xu HH;

Ohlsen KL, Forsyth RA,

Haselbeck R, Yamamoto R,

Malone C, Carr GJ,

ŋο̈ Wang Wall WPI; 2003-029926/02

118

9 9 178 180 237 240 297 297

P-PSDB; ABU50100

(ELIT-) ELITRA PHARM INC. Zamudio C, Trawick JD,

21-MAR-2001; 2001US-00815242. 06-SEP-2001; 2001US-0094893. 25-OCT-2001; 2001US-0342923P. 08-FEB-2002; 2002US-00072851. 06-MAR-2002; 2002US-0362699P.

2002WO-US009107

21-MAR-2002;

03-OCT-2002

```
strains; or (13) identifying the target of a compound that inhibits the identifying proteins or screening for homologous nucleic acids are useful for for cellular proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational fund discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              298 ACTÓTOGOCOAGACGOATCGOGGGOTCGOTÓTTCAACGGGGGATATTTGTCAATCTA 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCAATCCCAAAAGTATTGTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAA 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Accaarcccaaaagrarigicirircriscccccrcriricccccaaricarcarcccca 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGAGCGCTGT 595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGACCTTTGAATGGTGGTTCGCCTATCTACTGACCTCAACTCTGCTGAGTCTTTCTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTTCAGGCGCCATCAATACCATGACGACGTCTATCAACCATGGATATCGTGGCGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTCTATCGCCGGACTCCAGACCGGACTGGGGATACGTATCGTACTGGTGGGCGTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCCGCAACTGATGTATATCGTGGTCGGGGTCACCACTATTGTGGTCGATATTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCTCTGGTGCAATCAACACTATGACCACCTCGGTCAACCACGGTTATCCGGCCG--GTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          creseracecrerririce ececrece contrara a a recentrario de la consecución de la contrario de la 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGG-ACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGCAGGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGATGATCGGTTACGCCACCCTTGCTCAACGG--ATTGCTCTATGGATTAAAGGACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ώ
ώ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 623 BP; 124 A; 171 C; 168 G; 160 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 56.1%; Score 344.8; DB 7; Length Best Local Similarity 76.6%; Pred. No. 9.5e-104; Matches 475; Conservative 0; Mismatches 137; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | || || || || || || TGGCGTCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 969
       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
```

```
The invention relates to an isolated mucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibites proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the mucleic acid condition and isolated by the mucleic acid; (2) an bost cell containing the vector; (3) an isolated condition and polypeptide or its fragment whose expression is inhibited by the antisense mucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or that has an activity against a biological pathway required for proliferation, or that that an activity against a biological pathway required for proliferation, or that tinhibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits specification of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the test compound that inhibits proliferation of computed is overexpressed or underexpressed; (12) determining the extent to twhich each of the strains is present in a culture or collection of strains, or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids required for is convery programs or for screening for homologous nucleic acids required for the programs or for screening and an organism. Or for screening and an organism or for screening and an organism or the sail and an organism. The section of an organism or for screening for homologous nucleic acids required for the procession of an organism. Or for screening candidate model and organism or for screening candidate model and organism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at the wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGACCTTAGACTGGTGGTTAACCTATCTGCTGACAACATTGATCCTCAGTCTTTCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 7; Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 621 BP; 135 A; 143 C; 156 G; 187 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
44.7%; Score 274.8; DB 7; Length
Best Local Similarity 67.5%; Pred. No. 1.8e-80;
Matches 416; Conservative 0; Mismatches 197; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 14; SEQ ID NO 41840; 1766pp; English
```

477

537

essential gene #35627

Prokaryotic

(first entry)

ВР

ACA53970 standard; DNA; 621

ACA53970;  ç

```
The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibits proliferation of a cell. Also included are: of the nucleic acid inhibits proliferation of a cell. Also included are: concoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated collypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or that has an activity against a bological pathway the gene product or that has an activity against a bological pathway to require for proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation of an organism acts; (9) manufacturing an antibiocit; (10) profiting a compound; as activity; (11) a culture comprising strains in which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiocit; (10) profiting a compound; as extivity; (11) a culture comprising strains in which ach of the strains is present in a culture or collection of product is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a compound that inhibits the strains; or (13) identifying the target of a compound that inhibits for cellular proliferation to isolate of compound that inhibits of collection of an organism. The antisense nucleic acids are useful for cellular proliferation in cells other than 8; aureus, 8; typhimurium, ceptured for proliferation in cells other than 8; aureus, 8; typhimurium, ceptured for proliferation in cells other than 8; aureus, 8; typhimurium pattent did not forme patter of the printed specification, but was obtained the pattent did not formed directly from MIPO at geq
                                                   New antisense nucleic acids, useful for identifying proteins or s
for homologous nucleic acids required for cellular proliferation
isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                           Claim 1; SEQ ID NO 1269; 1766pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCTGAATAAGATTTTCGG 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAS89412 standard; cDNA; 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 100.
Matches 259; Conservative
                 WPI; 2003-029926/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
AAS89412
ID AAS89
XX
à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                   GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCCGCTGGTGCAATTGACCTTAAA 297
                                                                                                                                                                                                                                                      241 GCTTACTTAATTTGGCTTGGTATTCAACAATGGCGTGCAGCCGGGTCGCTTGACCTGCAT 300
                                                                                                                                                                                                                                                                                                                              301 gcacrescanacianteccensecennasecretimanacerecensimientalecre 360
                                                                                                                                                                                                                                                                                                                                                                    ACCAATCCCAAAAGTATTGTGTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAA 417
                                                                                                                                                                                                                                                                                                                                                                                                          361 ACCAATCCAAAAGCATTGTTTTTTCTGGCGGGTTATTTCCACAATTTGTACTGCCACAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGCCGCAACTGATGATATATCGTGCTCGGCGTCACCACTATTGTGTGGTCGATATTATT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACCGCAGGTGGCACAGTATTTGATTTTGGGCAGCACCAGTGTGATTGTCGATATTATC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                         GTGATGATTGGTTATGCCACTTTGGCTACACGTATTGCCCGTTGGATTAAATCGCCACAG
                               GGCTCGGGGGCCATTAACACAATGAGCACTGCCATCAGCCATGGTACCCGTGGGGTTGTT
                                                                   GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGT~GGG
                                                                                                                                             GITGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCG
                                                                                                                                                                                                                                                                                            298 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541 CAAATGAAACTCTTGAACCGAATATTTGGCGGCCTATTTATGTTGATTGGTGCATTATTA
                                                                                                                                                                               181 CITGGIGCCCIGGICICICAAICCTTACIGGCATITGAAATATTAAAGIGGCICGGIGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGATGATCGGTTACGCCACCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ss; prokaryotic essential gene; cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Prokaryotic essential gene antisense oligonucleotide #1269.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          598 GCATCGGCGAGGCATG 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601 GCCACAGGGGGCAAAG 616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-0342923P
08-FEB-2002; 2002US-00072851.
06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-MAR-2002; 2002WO-US009107.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-MAR-2001; 2001US-00815242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          399/c
ACA13399 standard; DNA; 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             drug design.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-OCT-2003
19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antisense;
                                                                                                                                                                                                                                                                                                                                                                    358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 538
                             61
                                                                   119
                                                                                                                                           178
                                                                                                                                                                                                                                                                                                                                                                                                                                               418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACA13399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wang L,
Wall D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Archaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
ACA13399/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                           g
                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                             셤
                                                                   ò
                                                                                                                                                                                                                 ઠે
```

```
ö
                                                                                                                                                                                                                                                                                                               140
                                                                                                                                                       367
                                                                                                                                                                                                                                                               427
                                                                                                                                                                                                                                                                                                                                                                     487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             547
                                                                                                                                                                                                                                                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                            259 CTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCA.
                                                                                                                                                                                                                                                                                                                  199 AAAGTATTGTGTTTTCTGGCGCGCGTATTTCCGCAATTCATGCCGCAACAGCCGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                          139 rdargcagrararcerecreecercaceacrarrereres rearrarrarreres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             488 GTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GITACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGTGAAGG
                                                                                                                                                          308 CTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCA
                                                                                                                                                                                                                                                               368 AAAGTATTGTGTGTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAAC
                                                                                                                                                                                                                                                                                                                                                                       TGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCG
                                                                                                          Gaps
                                                                                                        ..
                                                     Length 259;
Sequence 259 BP; 74 A; 59 C; 64 G; 62 T; 0 U; 0 Other;
                                               42.1%; Score 259; DB 7; 100.0%; Pred. No. 2e-75;
```

(first entry)

1340 TTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGA 1399

200

g ò 원

260

E. coli growth and proliferation related DNA sequence SEQ ID NO:107. Escherichia coli; growth; proliferation; microbial; antimicrobial; bacterial infection; microorganism; ds.

Escherichia coli.

AAH84479 standard; DNA; 263

RESULT 14 AAH84479/

26-SEP-2001

AAH84479;

```
Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder; ss.
                     DNA encoding novel human diagnostic protein #25216.
                                                                                30-MAR-2001; 2001WO-US008631.
                                                                                           31-MAR-2000; 2000US-00540217.
23-AUG-2000; 2000US-00649167.
                                                                                                                       Drmanac RT, Liu C,
                                                                                                                                   2001-639362/73
                                                                                                             HYSE-) HYSEQ INC
                                                                                                                                   WPI; 2001-639362/
P-PSDB; ABG25225.
                                                           WO200175067-A2
          13-FEB-2002
                                                                      11-OCT-2001
```

ΥŢ,

The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, ollogomers, and for chomosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal cartivity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a useful for generating antibodies against it, detecting or quantitating a useful for generating antibodies against it, detecting or quantitating of supplement. (II) and its binding pattners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polymucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations are also propertied. ö 1160 Gredeacrargrararregeseagririrgreaarcreaecaareecaaaagrarrerer 1219 1220 TTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGATA 1279 379 439 440 TCGTGCTCGCCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCC 499 and to produce other types of data and products dependent on DNA and amino acid sequences. AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention. Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at TTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAACAGCCGCAACTGATGCAGTATA GTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGT New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess . 0 DB 5; Length 1884; Sequence 1884 BP; 495 A; 464 C; 479 G; 446 T; 0 U; 0 Other; 40.4%; Score 248.6; DB 5; Length 96.6%; Pred. No. 1.6e-71; ive 0; Mismatches 9; Indels Claim 1; SEQ ID NO 25216; 103pp; English. ftp.wipo.int/pub/published\_pct\_sequences Query Match
Best Local Similarity 96.6
Matches 254; Conservative biodiversity. 380 320

g ò d ò

```
AAH84373 to AAH84499 represent Escherichia coli growth and proliferation related DNA sequences (I). AAH84500 to AAH84670 encode the E coli growth and proliferation related proteins given in AAG99079 and AAG98830 to AAG98830 to and proliferation related proteins given in AAG99079 and AAG98830 to compare the proliferation of compounds which interact with the gene products of (I). In addition the expression of (I) and the proteins, the purified proteins can be used to compound libraries for compounds that can be used to generate reagents and screen small molecule libraries or other candidate compound libraries for compounds. In addition, nucleic acid probes compounding compounds. In addition, nucleic acid probes complementary to (I) that are specific for particular species of microorganisms can be used to identify particular microorganism species in clinical specimens, therefore, providing a rapid and dependable method by which to identify the causative agents of a bacterial infection. Also, by which to identify the causative agents of a bacterial infection. Also, specific microorganisms that produce such proteins in a species specific manner. AAH844311 and AAH84670 represent sequencing primers used in the isolation of E. coli growth and proliferation related sequence, which are isolation of E. coli growth and proliferation related sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel nucleic acids that inhibit Escherichia coli proliferation, useful for screening for homologous genes and for designing expression vectors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               305 CCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33.7%; Score 207.4; DB 4; Length 263; 94.3%; Pred. No. 2.9e-58; ive 0; Mismatches 11; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 263 BP; 72 A; 60 C; 68 G; 63 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Zyskind J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 126; 522pp; English.
                                                                                                                                                                                                                                                                                                                         09-NOV-2000; 2000WO-US030950.
                                                                                                                                                                                                                                                                                                                                                               99US-0164415P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 94.3
Matches 248; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                      (ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ohlsen K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4PI; 2001-335933/35
                                                                                                                                                                                                                                            WO200134810-A2.
                                                                                                                                                                                                                                                                                                                                                               09-NOV-1999;
                                                                                                                                                                                                                                                                                  17-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                             Forsyth RA,
à
```

ω .. 364

```
263 CCCCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATC 204
                                            424
                                                                                      144
                                                                                                                                483
                                                                                                                                                                                                                  484 ATC-GGTTACGCCACCCTTGCTCAACGGATTG--CTCTATGGATTAAAGGACCAAAGCAG 540
                                                                                                                                                                        84
                                                                                                                                                                                                                                                               24
                                                                                                                                                            143 AACTGATGCAGTATATCGTGCTCGGGCGTCACCACTATTGTGGATGATATTATTGTGATG
                                                                                                                                                                                                                                                 83 ATCGGGTTACGCCACCCTTGCTCAACGGGATGGCTCTAAGGGATTAAAGGCCCAAACCAA
                                                                             203 CCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCTCCCGCAACAGCCGC
                                                                                                                              425 AACTGATGCAGTATATCGTGCTC-GGCGTCACCACTATTGTGGTCGATATTATTGTGATG
                                          CCAAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATGTCGCGCAACAGCCGC
                                                                                                                                                                                                                                                                                                         541 ATGAAGGCGCTGAATAAGATTT 563
                                                                                                                                                                                                                                                                                                                                                 23 Argandececreanianearrir
                                          365
                                          ò
                                                                          Q
                                                                                                                         ò
                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                         ò
```

RESULT 15 AAS89410/c ID AAS89410 standard; cDNA; 274 BP

AAS89410;

DNA encoding novel human diagnostic protein #25214.

(first entry)

13-FEB-2002

Human, chromosome mapping, gene mapping, gene therapy, forensic, food supplement, medical imaging, diagnostic, genetic disorder, ss.

Homo sapiens.

40200175067-A2

11-OCT-2001.

30-MAR-2001, 2001WO-US008631

31-MAR-2000; 2000US-00540217. 23-AUG-2000; 2000US-00649167.

- B0000 1 10000 - 5000 - 5

(HYSE-) HYSEQ INC

Drmanac RT, Liu C, Tang YT,

WPI; 2001-639362/73 P-PSDB; ABG25223.

New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity.

Claim 1; SEQ ID NO 25214; 103pp; English.

The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain sequences. (I) is useful as hybridisation probes, polymerase chain in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed can be suppressed sequence tags for identifying expressed can be suppressed to the control of (II) or to treat disease states involving (II). (II) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of states expressabing (II). (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polymucleotide sequences have applications in dispostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and

```
ö
                                                                                                                                                                                                                                                                           468
                                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                 528
amino acid sequences. AAS64197-AAS94564 represent novel human diagnostic coding sequences of the invention. Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at ttp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                   214 GATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAA
                                                                                                                                                                                                                                                                                                                 274 AricciecaAcagecegeaAcrearegeagrararegrecressesereaceacrarrarrerse
                                                                                                                                                                                                                                                                                                                                                                 GATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAA
                                                                                                                                                                                                                                                                           409 ATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTC
                                                                                                                                                                                                                           0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                     583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGG 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                       529 GGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTTCGGCTCGTTGTTTAATGCTGG
                                                                                                                                                                                   Length 274;
                                                                                                                                                                                                                           0; Indels
                                                                                                                                     Sequence 274 BP; 61 A; 71 C; 70 G; 72 T; 0 U; 0 Other;
                                                                                                                                                                              28.5%; Score 175; DB 5;
100.0%; Pred. No. 1.7e-47;
live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search completed: March 28, 2004, 14:38:03 Job time : 310.314 secs
                                                                                                                                                                                   Query Match
Best Local Similarity 100.C
Matches 175; Conservative
                                                                                                                                                                                                                                                                                                                                                                 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154
       8888888
                                                                                                                                                                                                                                                                                                                                                                                                       쉱
                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
```

```
TACTIGATITGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAATCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 GGGACGCTATTITCCCGCTCAGTGATTGCGTTTGAAGTGTGAGGCGGGCGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              737 gegacectartricccecrcaerearrecerricaaererreaagrerreaagreegeceeeecr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117, Appl
1509, Appl
1509, Appl
278, App
6015, App
6315, App
6175, App
6175, App
6175, Ap
6173, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          274, App
895, App
107, App
6447, Ap
777, Ap
777, Ap
2622, Ap
2682, Ap
3779, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6183, Ap
5833, Ap
15, Appl
                                                                                                  March 28, 2004, 14:10:49; Search time 61.6694 Seconds (without alignments) 5534.263 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seguence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                  615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seduence sed
                                                                                                                                                                                                                1 atgaccttagaatggtggtt......tagcatcggcgaggcatgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sued_Patents_NA:*
/cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/RB_COMB.seq:*
/cgn2_6/ptodata/2/ina/RB_COMB.seq:*
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-396-357-1

US-09-711-164-274

US-09-711-164-107

US-09-741-1164-107

US-09-252-991A-6447

US-09-252-991A-6103

US-09-328-352-2682

US-09-38-352-2682

US-09-553-991A-15039

US-09-655-908-17

US-09-655-908-17

US-09-655-901A-15039

US-09-655-91A-615039

US-09-655-91A-615039

US-09-655-91A-615039

US-09-611-976-165039

US-09-252-991A-6294

US-09-252-991A-6294

US-09-252-991A-6294

US-09-252-991A-6294

US-09-252-991A-6175

US-09-252-991A-6175

US-09-252-991A-6175

US-09-252-991A-6175

US-09-252-991A-6175

US-09-252-991A-6175

US-09-611-976-16539

US-09-611-976-16539

US-09-619-978-2566

US-09-619-978-2566

US-09-252-991A-6183

US-09-318-91A-6183

US-09-318-91A-6183

US-09-318-91A-6183
                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                         682709 segs, 277475446 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                            US-09-847-392-1_COPY_557_1171
615
                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                   - nucleic search, using sw model
                                                                                                                                                                                                                                                   IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31
30.6
30.6
30.6
30.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                     OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database :
                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                          uo
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  υυ
```

•	Sequence 11778, A Sequence 11558 A Sequence 11558 A Sequence 11558 A Sequence 1156, Ap Sequence 1156, Ap Sequence 4132, App Sequence 432, App Sequence 124, Ap Sequence 13, Appli Sequence 14, Appli Sequence 13, Appli Sequence 14, Appli Sequence 14, Appli Sequence 14, Appli Sequence 14, Appli Sequence 154, Appli Sequence 154, Appli Sequence 154, Appli	TH CONFERS ON BACTERIUM TO LO-HOMOSERINE AND METHOD	135)/ii/i,  100.0%; Score 615; DB 4; Length 1200; imilarity 100.0%; Pred. No. 7.38-200; Conservative 0; Mismatches 0; Indels 0; Gaps ATGACCTTAGANGGIGGTTTGCCTACCTGCTGACATCGATTTTAACGCTGTCGCCA 60 ATGACCTTAGANTGGIGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA 61 ATGACCTTAGANTGGIGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA 61	GGCTCTGGTGCAATCAACACTATGACCACGCTCGCTCACGGTTATCCGGCCGG
	4 US-09-252-991A-1 4 US-09-252-991A-1 4 US-09-328-352-12 4 US-09-328-352-12 4 US-09-513-783A-2 4 US-09-513-783A-2 4 US-09-513-783A-2 4 US-09-513-783A-2 4 US-09-161-994A-1 1 US-08-161-994A-1 1 US-08-161-994A-1 1 US-09-103-840A-3 3 US-09-103-840A-3 4 US-09-103-840A-3 5 US-09-103-840A-3 7 US-09-103-840A-3 8 US-09-103-840A-3 9 US-09-103-840A-3 1 US-09-103-840A-3 1 US-09-103-840A-3 1 US-09-103-840A-3 2 US-09-103-840A-3 2 US-09-489-039A-1 2 US-09-489-039A-1	ULT 1  109-196-357-1  109-196-357-1  109-196-357-1  109-1963-357-1  109-1963-357  109-1963-357  109-1963-357  109-1963-357  109-1963-357  109-1963-357  109-1963-357  109-10-30-30-30-30-30-30-30-30-30-30-30-30-30	135)/tifil 100.0%; Score 615, DB 4; Length 1200; imilarity 100.0%; Pred. No. 7.38-200; Conservative 0; Mismatches 0; Indels 0; « ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGATCGATC	GGCTCTGGTGCAATCAACACTATGACCACGCTCAACCACGGTTATCCGGCCGG
	23 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	SULT 1  -00-396-357-1  Sequence 1, Application US/09396357  Sequence 1, Application US/09396357  GENERAL INFORMATION: APPLICANT: ZAKATAEVA, NATALYA RRADIEV APPLICANT: ALCOSHIN, VLADIMIR VENYAM APPLICANT: ALCOSHIN, VLADIMIR VENYAM APPLICANT: TOKHARKOVA, ALL VALENTINOV APPLICANT: TOKHARKOVA, ALL VALENTINOV APPLICANT: DELAREOVA, ALL VALENTINOV TITLE OF INVENTION: DAR CODING FOR PROPUCING L. FILE REFERENCE: 0010-1039-0 CURRENT APPLICATION NUMBER: US/09/39 CURRENT FILING DATE: 1999-09-15 EARLIER FILING DATE: 1999-09-15 EARLIER PELING DATE: 1999-10-13 SOFTWARE: PATENTINO NUMBER: NUMBER: PELING DATE: 1999-09-15 SEQ ID NO 1 SEQ IN SECON NUMBER: SECON NUMBER NUMBER PATURE: NUMBER PATURE: NUMBER PATURE: NUMBER PEATURE: NUMBER PEATURE: NUMBER PEATURE: NUMBER PEATURE: NUMBER NUMBER NUMBER PEATURE: NUMBER N	357- 14ch 13ch 13ch 13ch 13ch 13ch 13ch 13ch	
	Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი Ი	RESULT 1 US-09-396-3; Sequence; Sequence; Batent No Batent Internation Applican ITTE OF ITTE	vs-09-396- Query Ma Query Ma Best Loc Matches Qy	ò

736 240 196

0y 442 GTGCTCGGCGTCACCATTTGTGGTCATATTTGTGATGATGATGCCCCTT 501  Db 241 GTGCTCGGCGTCACCATTTGTGGTCATATTATTGTCATGATCACCCCTT 300  242 GTGCTCGGCGTCACCACTATTGTGCTCATTATTGTCGTTACGCCTCGTT 300  Qy 502 GCTCAACGGATTGCTCTATTGTCGATTAATTATTGTCGGTTACGCCTCTT 300  Db 301 GTCCACGGATTGCTCTATTGGTCGATTAAACGAGAGAGAG	CONCANTENT Klebsiella pneumoniae  US-09-489-039A-895  Query Match  Best Local Similarity 77.6%; Pred. No. 5.1e-118;  Matches 479; Conservative 0; Mismatches 135; Indels 3; Gaps 2;  Matches 479; Conservative 0; Mismatches 135; Indels 3; Gaps 2;  A HILL	
	Sequence 24, Application US/09711164 Patent No. 6589738 GENERAL INFORMATION: APPLICANT: Foreyth, R. Allyn APPLICANT: Foreyth, Rari APPLICANT: Cyskind, Judith TITLE OF INVENTION: GENES ESSENTIAL FOR MICROBIAL PROLIFERATION AND ANTISENSE THERET FILE REPRENCE: ELITHA.008A CURRENT PPLING DATE: 200-11-09 FRICE APPLICATION NUMBER: US 60/164415 PRIOR FILING DATE: 1999-11-9 NUMBER OF SEQ ID NOS: 469 NUMBER OF SEQ ID NOS: 469 SOFTWARE: FastSEQ for Windows Version 4.0 ELNGTH: 417 TYPE: DAA ORGANISM: Escherichia coli FEATURE: NAMBEKEY: CDS LOCATION: (1)(417) US-09-711-164-274	Query Match         67.3%;         Score 414;         DB 4;         Length 417;           Best Local Similarity         100.0%;         Pred. No. 1.9e-131;         0;         Gaps         0;           Matches         414;         Conservative         0;         Mismatches         0;         Indels         0;         Gaps         0;           Qy         202         GTGATTGGTTTGAAGTGGGGAGGGGGGGTTACTTGATTGGCTGGGATC         6         1         GTGATTGGTTTGAGTGGGGGGGGGGGGGGGGGGTTACTTGATTGGCTGATTGGGGATC         6           Db         262         CAGCAGTGGGGGGGGGGGGGGGGGGGGGGGGGGGTTACTTGATTGGCTGATTGGGGATC         6         1         GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

```
RELATING TO PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          280 gecircaligreciacagariscaginacagerinacagagaganaciagaacacacagaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                640 GCGCAATACCTGATCATGGGCGGCACCATGATCGTCGTCGACCTGATCGTCATGGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       crecadarceccrecorecanos anos con contratos con contratos de contratos d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193 TCCCGCTCAGTGATTGCGTTTGAAGTGTAGGCGCCAGGCGCGCTTACTTGATTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                geacerecentraceres de la constant de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGGAATCCAGCAGTGGC--GCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         criécegrececiásirdecagedececacadecerridaecaceardedeaaceeer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       520 crasasciancerrancerrasicrasicrasirrasirancerasicanas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         580 GCGTGATCTTCAIGCTCGCGGGTGCTGCCGCAGTTCATCGACCCGCACCAGCCGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         430 AIGCAGIATATCGIGCTCGGCGTCACCACTATTGIGGTCGATATTATTGTGATGATCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACACCEGECTECCECECETACECETACTECETTCECCECECECEAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220 ideirodecirciretrecrecereceaecericaecereredecededededededecare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAATCGCGTCGACATT-TGTTCCAGCGCGCAGTTTTTGTGAATCTCACAATCCCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                370 AGTATIGIGITITCIGGCGCCGCIATITCCGCAAITCATCATGCCGCAACAGCCGCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAAGCAGATGAAGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     760 ereakcenkechreeckeretrerresteereceeeeeregesteereeeeeere
                                                                                                                                                                                                                                                                                                                                                                                                 16 TGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCCG-TGGGGTTGGGACGCTATTT
                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-252-991A-6103/C

US-09-252-991A-6103/C

Sequence 6103, Application US/09252991A

Patent No. 6551795

GENERAL INFORMATION:
APPLICANT:
APPLICANT:
APPLICANT:
PTILE OF INVENTION: ARGUINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A

PRIOR PILING DATE: 1999-02-18

PRIOR PILING DATE: 1999-02-18

PRIOR PILING DATE: 1998-02-18

PRIOR PILING DATE: 1998-02-18

PRIOR PILING DATE: 1998-02-18

PRIOR PILING DATE: 1998-02-18

NUMBER OF SEQ ID NOS: 33142

LENGTH: 930
                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                   Score 112.4; DB 4; Length
Pred. No. 3.1e-28;
0; Mismatches 276; Indels
; LENGTH: 834

; TYPE: DNA

; ORGANISM: Seeudomonas aeruginosa

US-09-252-991A-6447
                                                                                                                                                                                                              Query Match
Best Local Similarity 53.5%;
Matches 324; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   610 CATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-711-164-107/c
US-09-711-164-107/c
Sequence 107, Application US/09711164
Patent No. 6589738
GENERAL INFORMATION:
APPLICANT: Forsyth, R. Allyn
APPLICANT: Forsyth, R. Allyn
APPLICANT: Cyskind, Uddith
TITLE OF INVENTION: EXERES ESSENTIAL FOR MICROBIAL PROLIFERATION AND ANTISENSE THERET
FILLE OF INVENTION: 2000-11-09
FILLE REPERENCE: ELITRA.008A
CURRENT APPLICATION NUMBER: US 60/164415
PRIOR FILLING DATE: 1999-11-9
PRIOR FILLING DATE: 1999-11-9
NUMBER OF SEQ ID NOS: 469
SOUTWARE: FESTSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 641, Application US/09252991A

Sequence 6551795

GENERAL INFORMATION:

APPLICANT: Marc J. Rubenfield et al.

APPLICANT: Marc J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC AID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.118

FULLE APPLICATION NUMBER: US 60/074,788

PRIOR PILING DATE: 1998-02-18

PRIOR PLILIGATION NUMBER: US 60/094,190

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR APPLICATION NUMBER: 1998-07-27

NUMBER OF SEC ID NOS: 33142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATC-GGTTACGCCACCCTTGCTCAACGGATTG--CTCTATGGATTAAAGGACCAAAGCAG 540
    597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       203 CCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGATGCCGCAACAGCCGC 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTGATGCAGTATATCGTGCTC-GGCGTCACCACTATTGTGGTCGATATTATTGTGATG 483
                                                                                    ses cagargaaggcgrrgaacaaagrcrrrggrrcacrgrrrargcrgcrggrgggcgcrccrc e24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arcederraceccarectracercaacedearedercraagedarraadecccaaaccaa 24
    CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              263 ccccractcaarccccrccaccarricrccaccccccccarrirrcrcaarcrcaccaarc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATGCCGCAACAGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 263;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .6e-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 207.4;
Pred. No. 5.6e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAGGCGCTGAATAAGATTTT 563
                                                                                                                                                                         614
                                                                                                                                                                                                                                                                  GCCTCCGCCCGCCATGC 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 94.3%;
Matches 248; Conservative 0
                                                                                                                                                                         GCATCGGCGAGGCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-252-991A-6447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-711-164-107
                                                                                                                                                                         298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23
ò
                                                                               셤
                                                                                                                                                                         à
                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
```

원  $\delta$ 임 ò 9  $\delta$ g ઠે 임 ò 셤 ò Вb ò d ò

```
APPLICANT: Gary Breton et. al TITLE OR INDENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS TO TOTAL TITLE OF INVENTION NUMBER: US/09/489,039A CURRENT APPLICATION NUMBER: US/09/489,039A CURRENT PILING DATE: 2000-01-27 PRIOR APPLICATION NUMBER: US 60/117,747 NUMBER OF SEQ ID NOS: 14342 SEQ ID NO 2622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      534
                                                                                                                      237
                                                                                                                                                                    217 GTAGGTGTTCTATTCGCAACGACACCATTAGCCTTTCAGGCGGTTAAGTGGTTTGGGGTA 276
                                                                                                                                                                                                                  294
                                                                                                                                                                                                                                                                336
                                                                                                                                                                                                                                                                                                              354
                                                                                                                                                                                                                                                                                                                                                             396
                                                                                                                                                                                                                                                                                                                                                                                                             414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   443
                         --GICTATIGCIGGGCTICAGACCGGACTGGCGATICATATIGTGCTGGTTGGCGTGGG- 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                      397 Arcagraaccaradagecarcerandarinaridacagiringecicagirciagarina 456
                                                                                                                      GTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTTGAAGTGTTGAAGTGGGCAGGCGCG
                                                                                                                                                                                                                                                                                                              295 AAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        457 AGCAÁACCTCÁATGGÁTACÁATÁTCTGATTATGGCAGCCÁCTÁTGGTTACGATTGÁTTTG
                                                                       TGGAATGCAATTGGTTTGCAAATCGCCTTGTTAATTCAAATCATGATTGTAGCGGGGGGGT
                                                                                                                                                                                                                                                                                                                                                             337 caacacaaaaaaaggaraaricrerirrescricricrearcaarggarrigradicaar
                                                                                                                                                                                                                                                                                                                                                                                                             355 CTCACCAATCCCAAAAGTATTGTGTTTCTGGCGCGCGCTATTTCCGCAATTCATCATGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         475 ATTGTGATGGATGGCTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                174 IGGGGTIGGGACGCIATITICCCGCTCAGIGATIGCGTTIGAAGIGTTGAAGIGGGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           204 regrifacerecectacies es reconstructes de residades regreses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          234 CGCGGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        264 adcadearaccirrocridecridecricedricedricerecreceaceaceacearrina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        294 TAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cacccacccoscoaarcacarricacacaaraacrosrriccrocoroscaracrosoaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       354 TCTCACCAATCCCAAAAGTATTGTGTTTTCTGGCGCCCTATTTCCGCAATTCATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>rerectralacecelalalaresecelerieracerriceritriracerelaginalecese</u>
                                                                                                                                                                                                               GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCA---ATTGACCTT
                                                                                                                                                                                                                                                                277 GCTTATTTATTTTAGCCTATTTGCAGTGGACAGCACCTGTAAAAGATATAGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    517 ArriciaAridecrediriAracadgecradcircaAAAGrirraAgarrecracerrerer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 4; Length 645;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
9.6%; Score 59; DB 4; Length 645
Best Local Similarity 46.1%; Pred. No. 4.8e-10;
Matches 197; Conservative 0; Mismatches 230; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     535 AAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTA 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGCAACAAAATATTTAAACCGTGGTTTTGCAGTCATGTTTA 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2622, Application US/09489039A
Patent No. 6610836
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: DNA
; ORGANISM: Klebsiella pneumoniae
US-09-489-039A-2622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
US-09-489-039A-2622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415
                                                                                                                        178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   577
                                                                                                                                                                                                                  238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                             В
                                                                                                                      ઠે
                                                                                                                                                            유
                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 777, Application US/09328352
Patent No. 656298
GENERAL INFORMATION:
APPLICANT: GEY L. SECTOR BETON Et al.
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILLE REPERSENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILLING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'n,
                                                                                                                                                                                                                                                                                                                                                                                                                                                              252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                  504 redricectroricateacereacearcateacereicateaceceaeceaeceare 445
                                                                                                                                                                                                                                                                444 GCCTCGATGTCCTGCGGGTTGCAGTACGGCTTTGCGCGAGGCTACTGGAACGCGCTGGGC 385
                                                                                                                                                                                                                                                                                                                                                                                                        crecadarcedecredecerecadarcecarrerecedececerederecere 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGGAATCCAGCAGTGGC - GCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTA 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CICAAICG-CGICGACAITIGIICCAGCGCGCAGIIITIIGIGAAICICCAAAICCCAAA 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGGGCGACCGTTGACCCTGGTGCTGCGTGGTTTCCTGGTCAACGCCAGCAATCCCAAG 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     430 ATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGT 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   156
                                                                                                                                                                      75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGGGCTTACTTGATTTGG
                                                                                                                                                                                                                                                                                                                                                             CTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCG-TGGGGTTGGGACGCTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGACCTCGCCACTGGCTTTCAGCCTGATCAAGTGGTTCGGCGTGGCCTACCTGGTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         credecerrececcadrececadedececadadecerradadeacadaredeaaaceecer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      370 AGTATTGTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    144 GCGGTGATCTTCATGCTCGCGGTGCTGCCGCAGTTCATCGACCCGCACCAGCCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16 TGGTTTGCCTACCTGCTGACATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              84 gcéchanacrigancandedededacchroancencencencencencencencencencencencence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37 ArgicinigoaAginigoninigonaArangingocongingosicanaAraninicica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97 deaccadedealirecricialdresaccerraalmaarracciriasacardecrad
                                                                                                                           Gaps
                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                  Length 930;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                      Indela
                                                                     Score 102.4; DB 4;
Pred. No. 8.8e-25;
0; Mismatches 216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 75.4; DB 4;
Pred. No. 1.2e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches 291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACGCCACCCTTGCTCAACG 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Acinetobacter baumannii
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACACCGGGCTGGCTGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12.3%;
49.1%;
                                                                     Query Match
Best Local Similarity 55.6%;
Matches 278; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 49.1
Matches 286, Conservative
            ; OKGANISM: FSEUG
US-09-252-991A-6103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-328-352-777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-328-352-777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 77
                                                                                                                                                                                                                                                                                                                                                                                                           384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204
                                                                                                                                                                                                                                                                                                                                                                                                                                                           193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
```

ದ್ದ à

ठे

```
ò
                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                              52 AATCCAAAGGCAATACTTATCTTTACGGCCTTTCTTCCGCAATTCGTTAGCCCACAATTA 111
                                                                                                                                                                                                                                                                                                                                                                                                     112 CCGGCTAGTTCCCAGTTTCTAATACTTGGTTCTTTATTCTTGTTACTCGAGTTTATTGCA 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77 cccrafifcrcrcdrraaaacaccaccrrcrccrcrrgriarraricacrafirarca 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         458 CTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTC 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                137 charcerrancerrancerretrancarcerricearcacerreceaacacacacacr 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361 AATCCCAAAAGTATTGTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAG
                                                                                                                                                                                                                                                                                                                                                        CCGCAACTGATGCAGTATTCGTCCTCGGCGTCACCACTATTGTGGTCGATATTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                               481 ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  398 CGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGGGTCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 35.4; DB 4; Length 1028; Pred. No. 0.072; 0; Mismatches 61; Indels 0
                                                                                                                                                                             Score 36; DB 4; Length 312;
Pred. No. 0.023;
0; Mismatches 105; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Hallahan, David L.

TITLE OF INVENTION: cis-Prenyltransferases from Plants
FILE REFERENCE: BC.1019 US NA
CURRENT APPLICATION NUMBER: US/09/655,908
CURRENT FILING DATE: 2000-09-06
PRIOR APPLICATION NUMBER: 60/155,046
PRIOR FILING DATE: 1999-09-21
NUMBER OF SEQ ID NOS: 37
SOFTWARE: Microsoft Office 97
SEQ ID NO 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541 ATGAAGGCGCTGAATAAGATTTTC 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAAGTGTTCAATCGTATGTGC 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 17, Application US/09655908
Patent No. 6645747
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 82, Application US/09634238
Patent No. 6544772
GENERAL INFORMATION: APPLICANT: Glenn, Matthew
APPLICANT: Havukkala, Ilkka J.
                                                                                                                                                                             5.9%;
llarity 48.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 54.1%;
Matches 72; Conservative
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
SEQ ID NO 3779
                                                                                         TYPE: DNA
CRGANISM: Proteus mirabilis
US-09-543-681A-3779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               518 TATGGATTAAAGG 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          197 TATCGTCTCGAAG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TYPE: DNA
; ORGANISM: Glycine max
US-09-655-908-17
                                                                                                                                                                           Query Match
Best Local Similarity
Matches 99; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-634-238-82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JS-09-655-908-17
                                                                      LENGTH: 312
                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGIH:
                                                                                                                                                                                                                                                                                                     Sp
                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ы
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3779, Application US/09543681A
Patent No. 6605709
Patent No. 6605709
Patent No. 6605709
PAPPLICANT: GARY BRETON
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABIL TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION NUMBER: US 60/128,706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: GATY L. Breton et al.
APPLICANT: GATY L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              o;
                                                          383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     407
                  414 GCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATAT 473
                                                                                                       TATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACC 533
                                                                                                                                                                                                  TTATGCTGGTGGGAGCGCT 593
                                                                                                                                                                                                                                     Agccgragicakargcaidakicgcaccccciciricicirizaricccricical 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTT 563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                528 CTCAATATTCAAAGAGAAGATGCTTGCCGGAAATAATTTTTCTAAGCTCAATAAAGTCAG 587
                                                                                                                                            504 GCTGTGGTCGTTAACGCTGATTACCGCCACTCGCTATGCCGCAGGCATCCTGAAAAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                348 AAAGCTTTTCTATCAAGGGTTGTTTGCCTCACTTAATCCAAAAACAATTGTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        384 GGCGGCGCTATTICCGCAATICATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     408 TATTGCCCTTTTTCCACAGTTTATTGATATAAAAAAAAATATTAAATCAGTTTTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 444 GCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           468 Triarctriaacarrerecrisariossarirriaarirearriastririarsecaacririe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      324 ACATITGITCCAGCGCGCAGITTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 6.0%; Score 37.2; DB 4; Length 633; Best Local Similarity 46.2%; Pred. No. 0.013; Matches 123; Conservative 0; Mismatches 143; Indels (
                                                                                                                                                                                           AAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGT1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            564 CGGCTCGTTGTTTATGCTGGTGGGAG 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recereraraririririraraecae 613
                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2682, Application US/09328352 Patent No. 6562958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: DNA
; ORGANISM: Acinetobacter baumannii
US-09-328-352-2682
                                                                                                                                                                                                                                                                                                                            GCTGGCA 630
                                                                                                                                                                                                                                                                                  GTTAGCA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-543-681A-3779
                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-328-352-2682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 2682
LENGTH: 633
                                                                                                                                                                                                                                        564
                                                                                                                                                                                                                                                                                  594
                                                                                                                                                                                              534
                                                                                                                                                                                                                                                                                                                          624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         588
                à
                                                     g
                                                                                                       ò
                                                                                                                                            엄
                                                                                                                                                                                           ò
                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
```

ω

```
GENERAL INFORMATION:

APPLICANT: Bluemefeld, Marta
APPLICANT: Bluemefeld, Marta
APPLICANT: Bluemefeld, Marta
APPLICANT: Bluemefeld, Marta
APPLICANT: Chumakov, 11ya
BUGGUELECE, Lydie
APPLICANT: Chumakov, 11ya
ITTLE OF INVENTION: BIALLELIC MARKERS DERIVED FROM GENOMIC REGIONS CARRYING
ITTLE OF INVENTION: GENES INVOLVED IN ARACHIDONIC ACID METABOLISM
ITTLE OF INVENTION: GENES INVOLVED IN ARACHIDONIC ACID METABOLISM
ITTLE OF INVENTION: GENES INVOLVED IN ARACHIDONIC ACID METABOLISM
CURRENT APPLICATION NUMBER: US 69/502,330
PRICR FILING DATE: 2000-02-11
PRICR APPLICATION NUMBER: US 60/133,200
PRICR APPLICATION NUMBER: US 60/133,200
PRICR APPLICATION NUMBER: US 60/119,917
PRICR APPLICATION NUMBER: US 60/119,917
PRICR FILING DATE: 1999-02-12
PRICR APPLICATION NUMBER: US 60/119,917
PRICR FILING DATE: 1999-02-12
PRICR FILING DATE: 1999-02-12
PRICR FILING DATE: DATE: US 60/119,917
241 GGCCTGGCGGTGCTGATCACCACGCCGTGGCTGTTCAACGCGCTGAAGTACACCGGC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 169 TGGCGTGGGGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 535 regecadocececarcracritrracaacricacycarcraecagaarcacrecaartrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                475 ccadarderrocrorrangacrerrégearnardecagrorreccerreceacit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: primer bind
LOCATION: 449..468
OTHER INPORMATION: upstream amplification primer
NAME/KEY: primer bind
LOCATION: 879..898
OTHER INFORMATION: downstream amplification primer, complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5.2%; Score 32; DB 4; Length 1001;
50.7%; Pred. No. 1;
tive 1; Mismatches 71; Indels
                                                                         235 GCGGCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGC 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc binding '
LOCATION: 502..521
OTHER INFORMATION: 12-835-54.mis2, potential complement
                                                                                                                         301 GCGGTCTACCTGATCTGGATCGGCATCCAGGCCCTGCGCTC 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: 12-835-54 : polymorphic base A or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc binding
LOCATION: 481. 500
OTHER INFORMATION: 12-835-54.mis1, potential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc binding
LOCATION: 489. 513
OTHER INFORMATION: 12-835-54 potential probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  289 GACCITAAATCGCTGGCCTCTACTCA 314
                                                                                                                                                                                                                                        Sequence 278, Application US/09641638
Patent No. 6432648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: n=a, g, c or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 50.7
Matches 74; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
LOCATION: 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Homo Sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patent.pm
SEQ ID NO 278
LENGTH: 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: allele
LOCATION: 501
                                                                                                                                                                                                                          US-09-641-638-278/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-641-638-278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                          셤
                                                                    ò
                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 15039, Application US/09252991A

Parent NO. 6551795
GENERAL INFORMATION:
GENERAL INFORMATION:
MARCA INFORMATION:
TITLE OF INVENTION: WUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: ARRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: ARRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: ARRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 15039
LENGTH: 681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      309 TACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAA 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGGTCGG 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGC 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               175 GGGGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGCAGGC 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185 TAGACAGACTCGTCTGCATACTTTATAGGAGGAAGTTAAAAACATGCGTAAACATTACCC 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     369 AAGTATTGTGTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACT 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245 AAGGACTTTGTAATCGGTGGCGCAACTGCTTACCAAGTTGAAGGAGGGCAACCAAAGAA 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    305 GACGGAAAAGGTCGAGTTCTTTGGGATGATTTTCTGGAAAACAAGGGCGGTTTAGTCCT 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        365 GACCCCGCCGCTGATTTTTATCATCGCTATGATGAGGATTTGGCGTTAGCAGAAGCATAT 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Gaps
                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 32.8; DB 4; Length 1442;
Pred. No. 0.68;
0; Mismatches 142; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 5.2%; Score 32.2; DB 4; Length 681; Best Local Similarity 57.4%; Pred. No. 0.71; Matches 58; Conservative 0; Mismatches 43; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       425 GGTCATCAAGTAATACGGCT 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       549 GCTGAATAAGATTTTCGGCT 568
Bloksberg, Leonard, N.
Lubbers, Mark W.
Dekker, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 45.4%;
Matches 118; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 13
US-09-252-991A-15039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-252-991A-15039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
```

415 GGGCTGCAACCCCTGAAGCCTAGACA 390

셤

```
RESULT 15

US-09-634-238-195/c

US-09-634-238-195/c

US-09-634-238-195, Application US/09634238

Patent No. 654477

GENERAL INFORMATION:

APPLICANT: Havekala, likka J.

APPLICANT: Lubekberg, Leonard, N.

APPLICANT: Lubekberg, Mark W.

APPLICANT: Locole, Park W.

APPLICANT: Christensson, Anna C.

APPLICANT: Christensson, Anna C.

APPLICANT: Colole, Paul W.

APPLICANT: Orlole, Paul W.

APPLICANT: Cololesar, Timcholectides, materials incorporating

TITLE OF INVENTION: them and methods for using them.

FILE REFERENCE: 11000.104301

CURRENT APPLICANTON VIMBER: US/09/634,238

CURRENT FILING DATE: 2000-08-08

NOTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 195

LENGTH: 1597

TURDICANT:

LENGTH: 1597

TURDICANTE: LENGTH:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 5.2%; Score 32; DB 4; Length 1597; Best Local Similarity 52.2%; Pred. No. 1.4; Matches 71; Conservative 0; Mismatches 65; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(1597)
COTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA ORGANISM: Lactobacillus rhamnosus
```

ö

0; Gaps

à g ò Search completed: March 28, 2004, 18:24:34 Job time: 68.6694 secs

g ò g Seguence

1164918, Ap 1164918, Ap 111199, Ap 2009111139, Ap 200911139, Ap 20091139, Ap 200911

Sequence Sequence Sequence Sequence

US-10-142-885-358 US-10-158-790-358

Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedinence Sedine

US-10-282-122A-14918 US-10-282-122A-8689 US-10-338-110-119 US-10-433-561-139 US-10-433-561-139 US-10-142-426-358 US-10-142-426-358 US-10-142-426-358 US-10-142-426-358 US-10-141-751-358 
```
Sequence 1, Appli
Sequence 24, Appli
Sequence 274, App
Sequence 23973, A
Sequence 20027, A
Sequence 20027, A
Sequence 1269, A
Sequence 1269, Ap
Sequence 1269, Ap
Sequence 1269, Ap
Sequence 2003, Ap
Sequence 2003, Ap
Sequence 2003, Ap
                                                                              March 28, 2004, 16:45:05 ; Search time 261.248 Seconds (without alignments) 8764.284 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                               615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
                                                                                                                                                           1 atgaccttagaatggtggtt.....tagcatcggcgaggcatgcg
                                                                                                                                                                                                                                                                                                                                                               Published Applications NA:*

1: \cgn2_6/ptodata/1/pubpna/USO7_PUBCOMB.seq:*
2: \cgn2_6/ptodata/1/pubpna/PCT_MBW_PUB.seq:*
3: \cgn2_6/ptodata/1/pubpna/DCG_NBW_PUB.seq:*
4: \cgn2_6/ptodata/1/pubpna/USO6_NBW_PUB.seq:*
5: \cgn2_6/ptodata/1/pubpna/USO6_NBW_PUB.seq:*
6: \cgn2_6/ptodata/1/pubpna/USO8_NBW_PUB.seq:*
7: \cgn2_6/ptodata/1/pubpna/USO8_NBW_PUB.seq:*
7: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
8: \cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
9: \cgn2_6/ptodata/1/pubpna/USO9B_PUBCOMB.seq:*
11: \cgn2_6/ptodata/1/pubpna/USO9B_PUBCOMB.seq:*
12: \cgn2_6/ptodata/1/pubpna/USO9B_PUBCOMB.seq:*
13: \cgn2_6/ptodata/1/pubpna/USO9B_PUBCOMB.seq:*
14: \cgn2_6/ptodata/1/pubpna/USO9B_PUBCOMB.seq:*
15: \cgn2_6/ptodata/1/pubpna/USO0B_PUBCOMB.seq:*
16: \cgn2_6/ptodata/1/pubpna/USO0B_PUBCOMB.seq:*
16: \cgn2_6/ptodata/1/pubpna/USO0B_PUBCOMB.seq:*
17: \cgn2_6/ptodata/1/pubpna/USO0B_PUBCOMB.seq:*
18: \cgn2_6/ptodata/1/pubpna/USO0B_PUBCOMB.seq:*
18: \cgn2_6/ptodata/1/pubpna/USO0B_PUBCOMB.seq:*
18: \cgn2_6/ptodata/1/pubpna/USO0B_PUBCOMB.seq:*
18: \cgn2_6/ptodata/1/pubpna/USO0B_PUBCOMB.seq:*
          GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-927-395-1

US-09-927-395-1

US-10-282-122A-6496

US-10-282-122A-6496

US-10-282-122A-39598

US-10-282-122A-39373

US-10-282-122A-36579

US-10-282-122A-36579

US-10-282-122A-1269

US-10-282-122A-1269

US-10-282-122A-13154

US-10-282-122A-30530

US-10-282-122A-3159
                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                           2458946 seqs, 1861504846 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                   US-09-847-392-1_COPY_557_1171
615
                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                             sw model
                                                                                                                                                                                                 Gapop 10.0 , Gapext 1.0
                                                        nucleic search, using
                                                                                                                                                                                                                                                                            seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242222244444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           %
Query
Match Length D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                             Minimum DB
Maximum DB
                                                           OM nucleic
                                                                                                                                                              Sequence:
                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                     on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         111111
14321098765432
                                                                                     Run
```

ALIGNMENTS	RESULT 1 US-09-927-395-1 i Sequence 1, Application US/09927395 i Sequence 1, Application US/09927395 i Patent No. US2002053314A1 i Sequence 1, IUSHIYE 1 i GENERAL INFORMATION: i APPLICANT: ZAKATARVA, NATALYA PARADIEVICH i APPLICANT: ZAKATARVA, NATALYA PALVOWA i APPLICANT: ZAKATARVA, ULADIMIR VENYAMIOVICH i APPLICANT: ZAKATARVA, IRINA LVALENTINOVNA i APPLICANT: TOKHYAKOVA, IRINA LVALENTINOVNA i APPLICANT: TOKHYAKOVA, IRINA LVALENTINOVNA i TITLE OF INVENTION: DNA CODING FOR PROTEIN WHICH CONFERS ON BACTERIUM i TITLE OF INVENTION: POR PRODUCING L-AMINO ACIDS i FILE REPERENCE: 0010-103-0 i CURRENT APPLICATION NUMBER: US/09/927,395 i CURRENT PELLING DATE: 1999-10-15 i PRIOR PELLOR DATE: 1999-10-15 i PRIOR PELLOR DATE: 1999-10-15 i REATH REPERENCE: DATE: 1998-10-13 i SOFTWARE: Patentin Ver. 2.1 i SEQ ID NO 1 LLENGTH: 1200 i TYPE: DNA ORGANIEM: BECHERICHIA COLI FEATURE: i REATURE: i RAATURE: i NAME/KEY: CDS i LOCATION: (557)(1171) US-09-927-395-1	Query Match 100.0%; Score 615; DB 9; Length 1200; Best Local Similarity 100.0%; Pred. No. 4.3e-206; Matches 615; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	Oy 1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTAACGCTGTCGCCA 60

υυ

```
ద
                                                                                                                      à
                                                                                                                                                 g
                                                                                                                                                                                 8
                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1. Application US/09847392

Patent No. US20020102670A1

GENERAL INPORMATION:

APPLICANT: LIVSHITS, VIPALY ARKADIEVICH

APPLICANT: LIVSHITS, VIPALY APVIOVNA

APPLICANT: ALCOSHIN, VIALDIMIR VENYAMIOVICH

APPLICANT: ALCOSHIN, VIALDIMIR VENYAMIOVICH

APPLICANT: TOKHMAKOVA, IRINA LVOVNA

TITLE OF INVENTION: DAS CODING FOR PROTEIN WHICH CONFERS ON BACTERIUM

TITLE OF INVENTION: ESCHERICHIA COLI RESISTANCE TO LO-HOMOSERINE AND METHOD

TITLE OF INVENTION: FOR PRODUCING L-AMINO ACIDS

TITLE OF INVENTION: ESCHERICHIA COLI RESISTANCE

TITLE OF INVENTION: ESCHERICHIA COLI RESISTANCE

CURRENT APPLICATION NUMBER: US/09/447,392

CURRENT FILING DATE: 1999-09-15

PRIOR APPLICATION NUMBER: RU99118425

PRIOR APPLICATION NUMBER: RU99118425

PRIOR APPLICATION NUMBER: RU99118425

PRIOR SEQ ID NOS: 2

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO.

TENGTH. 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGCAACTGATGCAGTATATCGTGCTCGCGTCACCACTATTGTGGTCGATATTATTGTG 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG 540
                                676
                                                                                                       736
                                                                                                                                                                          796
                                                                                                                                                                                                              TACTTGATTTGGCTGGGAATCCAGCAGTGCGCGCCGCTGGTGCAATTGACCTTAAATCG 300
                                                                                                                                                                                                                                                                                   CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCGGGTTTTTGTGAATCTCACC 360
                                                                                                                                                                                                                                                                                                                       CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACC 916
                                                                                                                                                                                                                                                                                                                                                          AATCCCAAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAACAG 420
                                                                                                                                                                                                                                                                                                                                                                                            AATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAG 976
                                                                                                                                                                                                                                                                                                                                                                                                                                CCGCAACTGATGCCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTG 480
                                                                                                                                                                                                                                       TACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCCCTGGTGCATTGACCTTAAATCG
                      GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGAAGTGGGCAGGCGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCA
GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT
                                                                                                     Gretatificadeciticadacedecedaricatariereciecinedecenedecin
                                                                                                                                         GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGAGGCGCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1157 rodeceaecerece 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (557)..(1171)
US-09-847-392-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 2
US-09-847-392-1
                              617
                                                                                                     677
                                                                                                                                                                          737
                                                                                                                                                                                                                                               797
                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                       857
                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                          917
                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                               977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
61
                                                                  121
                                                                                                                                       181
                                                                                                                                                                                                              241
장 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                  ઠે
                                                                                                   g
                                                                                                                                       à
                                                                                                                                                                        셤
                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
```

```
977 cceccaacrearecagrararcerecrececercaccacrarrerecreararrarrere 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1097 ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGGAGCGCTGTTAGCA 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1037 ATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAG 1096
                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Zamudio, Carlos
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Chisen, Kari
APPLICANT: Zyekind, Judith
APPLICANT: Zyekind, Judith
APPLICANT: Zyekind, Judith
APPLICANT: Zyekind, John
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Honnification of Essential Genes in Microorganisms
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034
CURRENT RPLICATION NUMBER: US/10/282,122A
                                                                                                                                                                                        616
                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                 676
                                                                                                                                                                                                                                                                                                                                                                                                                                             736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541 ATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCGCTGGTGCAATTGACCTTAAATCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CIGGCCICTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 AATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATGATGCCGCAACAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421 CCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTG 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               797 TACTIGATITGGCIGGGAATCCAGCAGIGGCGCGCCGCTGCIGCAATIGACCTIAAAICG 856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           857 CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGTGAATCTCACC 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                917 AATCCCAAAAGTATTGTGTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAG 976
                                                                                                                                  9
                                                                                                                                                                       181 GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGCGGGCT
                                                                                                                                                                                                                                                                                                                 617 Gerreragiocaarcaacacrangaccaccredercaaccaegriarecegecegrage
                                                                                                                                                                                                                                                                                                                                                                                                                                             677 Grenarigeresecricadaceseacresesaarreararistesestreseresereseres
                                                                                                                               1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                           GTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      737 GGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGGGGTT
                                                                   Gaps
                                                               ;
0
   Length 1200;
                                                               Indels
Query Match
100.0%; Score 615; DB 9; L
Best Local Similarity 100.0%; Pred. No. 4.3e-206;
Matches 615; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 6496, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION UNDRER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1157 resecsassearses 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601 TCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-282-122A-6496
                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            202 GTGATTGCGTTTGAAGTGTAAGTGGGCAGGCGCGCGTTACTTGATTTGGCTGGGAATC 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 CAGCAGTGGCGCCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCCAATCGCGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                322 CGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTŢŢ 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 CGACATTIGITCCAGCGCGCAGITITIGIGAATCICACCAATCCCAAAGTATIGIGITI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            382 CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 GIGCTCGGCGTCACCÁCTATIGIGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGGGCTTACTTGATTTGGCTGGGAATC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                262 CAGCAGTGGCGCCCCCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 crescesceratricescaarrearececaacascececaecaecaarrearecagrarare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       442 GTGCTCGGCGTCACCACTATTGTGGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   502 GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           562 INCGGCICGINGINIANGCIGGIGGAGCGCIGNIAGCANCGGCGAGGCANGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 rresecrestratrarsecrestesasesecretrasearesesasesarses 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 67.3%; Score 414; DB 14; I
Best Local Similarity 100.0%; Pred. No. 2.5e-135;
Matches 414; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/10/282,122A CURRENT FILING DATE: 2003-02-20
           PRIOR APPLICATION NUMBER: US 09/711164
PRIOR FILING DATE: 2000-11-09
NUMBER OF SEQ ID NOS: 469
SEQ TYARRE: PastSEQ for Windows Version 4.0
SEQ ID NO 274
LENGTH: 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 39598, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Wang, Liangeu
APPLICANT: Zamudio, Carlos
APPLICANT: Manlone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Ohlsen, Kari
APPLICANT: Ohlsen, Kari
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John
APPLICANT: Tawick, John
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Grant
APPLICANT: Grant
APPLICANT: Persyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: ELITRA.034A
                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Escherichia coli
FEATURE:
NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                          ...(417)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
US-10-282-122A-39598
                                                                                                                                                                                                                                                                                                                                                                          ; LOCATION: (1)
US-10-287-274-274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Foreyth, R. Allyn
APPLICANT: Obleen, Kari
APPLICANT: Zyskind, Judith
TITLE OF INVENTION: GENES ESSENTIAL FOR MICROBIAL PROLIFERATION AND ANTISENSE THERETC
FILE REPERENCE: ELITHA.008DVJ
CURRENT APPLICATION NUMBER: US.10/287,274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 Gracicescercaccacrarreresresreariarrarrerearearesecescere 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 CAGCAGTGGCGCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGACATTIGHTH CAGGGGGGGGGTTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GIGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTT 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATC 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GTGATTGCGTTTGAAGTGTTGAAGTGGCCAGGCGCGGCTTACTTGATTTGGCTGGGAATC 60
PRIOR FILING DATE: 2000-05-23

PRIOR PLING DATE: 2000-05-24

PRIOR APPLICATION NUMBER: 60/207,727

PRIOR PLING DATE: 2000-05-26

PRIOR PLING DATE: 2000-09-06

PRIOR PLING DATE: 2000-09-06

PRIOR PLING DATE: 2000-19-30

PRIOR APPLICATION NUMBER: 60/242,578

PRIOR APPLICATION NUMBER: 60/242,578

PRIOR APPLICATION NUMBER: 60/253,625

PRIOR PLING DATE: 2000-11-27

PRIOR PLING DATE: 2000-11-27

PRIOR PLING DATE: 2000-12-3

PRIOR PLING DATE: 2000-12-3

PRIOR PLING DATE: 2000-12-6

PRIOR APPLICATION NUMBER: 60/267,931

PRIOR PLING DATE: 2001-20-9

PRIOR PLING DATE: 2001-02-9

PRIOR PLING DATE: 2001-02-16

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             202 GTGATTGCGTTTGAAGTGTTGAAGTGGGCGCGCGCGTTACTTGATTTGGCTGGGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACAATCCCAAAAGTATTGTGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         262 CAGCAGTGGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             562 ITCGGCTCGTTGTTTATGCTGGGAGCGCTGTTAGCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rrcedercerrerrangeredreeaececrerraecarcededaecerrede
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 67.3%; Score 414; DB 12; Length 4 Best Local Similarity 100.0%; Pred. No. 2.5e-135; Matches 414; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/164415
PRIOR FILING DATE: 1999-11-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 274, Application US/10287274 Publication No. US20030181408A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: DNA; ORGANISM: Escherichia coli
US-10-282-122A-6496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     502
```

ઠ 엄 ò g ò 엄 8 d 8 g

엄 ð

ò

```
US-10-282-122A-23973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATCCGGCCG--GTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 derrickededeckrickarkeckrickededererrarekadearkerkiedredededede 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 Gérreraresecesserecasacesseresserasaracararesereseseseseses 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 CTGGGTACGCTCTTTTCGCGCTCGCTCATCGCTTTTGAAATTCTGAAATGGGCTGGCGG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATGAAGGCGCTGAATAAAGCGTTTGCTTGTTTTATGCTGGTAGGCGCGCTCCTG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   298 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301 ACTOTOGOCCAGACGOAATOGOGGGTOGGTOGTTOAAACGGGGGATATTTGTOAATOTA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCAATCCCAAAAGTATTGTGTGTTTCTGGCGCGCTATTTCCGCAATTCATGCCGCAA 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCCGCAACTGAATGCAGTATATCGTGCTCGCGTCACCACTATTGTGGTCGATATTATT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACCGCAACTGGCGCAGTACCTCATTCTCGGCGTCACCACCATTGTGGTGGATATGATT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GIGATGACCGGTTACGCCACGCTGGCGCAGCGCATTGCCGCCTGGATTAAAGGACCAAAG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR FILING DATE: 2000-09-06
PRIOR PELING DATE: 2000-09-06
PRIOR PELING DATE: 2000-09-06
PRIOR PELING DATE: 2000-10-09
PRIOR PELING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR FILING DATE: 2000-12-29
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-16
Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 78614
SGOTWARE: ParentIn version 3.1
SEQ ID NO 39598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGACCTTTGAATGGTGGTTCGCCTATCTACTGACCTCAACTCTGTTGAGTCTTTCTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 12; Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 379.2; DB 12; Length
Pred. No. 6.2e-123;
0; Mismatches 133; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61.7%;
78.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: DNA; ORGANISM: Salmonella typhi
US-10-282-122A-39598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 78.0
Matches 482; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

RESULT

```
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034
CURRENT PAPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR PILING DATE: 2000-05-23
PRIOR PELICATION NUMBER: 60/206,448
PRIOR FILING DATE: 2000-05-26
PRIOR PELICATION NUMBER: 60/207,727
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR PILING DATE: 2000-10-23
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-12-22
PRIOR PILING DATE: 2000-12-22
PRIOR PILING DATE: 2000-12-22
PRIOR PILING DATE: 2001-12-22
PRIOR PILING DATE: 2001-12-22
PRIOR PILING DATE: 2001-12-22
PRIOR PILING DATE: 2001-12-22
PRIOR PILING DATE: 2001-10-21
PRIOR PILING DATE: 2001-12-22
PRIOR PILING DATE: 2001-12-24
PRIOR PILING DATE: 2001-12-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTA--TCCGGCCGGTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCG-TGGG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 GCGTCGATTGCCGGCTTGCAGACCGGGCTGGTTATTCATATCGTGCTGGTTGGCGTTGGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          238 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178 GTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGCAGGCGCG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 circácacicircriciccecercegiecregecriricageigerealaridadecegecego
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 gecthaechgarchggeragenarechaechanggegegegegegegegegegegegenegar 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 Angaccarnsagresresrivescriacorscriatararararararas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Remaining Prior Application data removed - See File Wrapper or PALM WINBER OF SEQ ID NOS: 78614
SOPTWARE: PatentIn version 3.1
ENDING OF THE PATENT OF THE P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 618;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 61.0%; Score 375; DB 12; Length 6
Best Local Similarity 77.6%; Pred. No. 1.9e-121;
Matches 479; Conservative 0; Mismatches 135; Indels
Sequence 21973, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TYPE: DNA
; ORGANISM: Klebsiella pneumoniae
US-10-282-122A-23973
                                                                                                                                                                                          APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Forsyth, R.
APPLICANT: Xamamoto, Robert
APPLICANT: Xu, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
```

7

9 9 177

```
61 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTA--TCCGGCCGGTG 118
                                                                                                                                                                                                                                                                                                                                                           61 Gerregegegrafraacaccardaccaccrecarcaacaacaacaacaacaacaacaacaacaacaacaa 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 GCATCGATTGCCGGTTTGCAGACCGGGCTGGGTATTCATATTGTGCTGGTCGGGATCGGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 chadadaccharrancadaracadachadarnakanarakkanadadadada 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTIACITGATITIGGCIGGGAAICCAGCAGIGGCGCGCCGCTGGTGCAATIGACCTIAAA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 degrarcrearrrescressearceaseaseseseseseseseseserecareaacersaar 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 ACGCTGGCTCTGACGCAAAACCGCGGCCATCTGTTTAAGCGTGCGGTATTCGTCAACCTG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      178 GTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            298 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCCGCAACTGATGCAGTATTCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT 477
                                                                                                                                                                                                                                              GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGT-GGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481 GTGATGATTGGTTACGCGACGCTGGCGCAGCGAATTGCGGGCGTGGATTAAAGGGCCTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 cadardaaddcccrdaaraaagrcrrrdccrcdcrgrrrardcrgcrrddcgccccrg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Trawick, John
APPLICANT: Carr, Grant
APPLICANT: Carr, Grant
APPLICANT: Yamamoto, Robert
APPLICANT: Yu, H.
APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.0348
CURRENT APPLICATION NUMBER: US/10/282,1228
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                  1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      caeccrcaeerdarecaeracreerecreeececeaccacrarrarcercaracarc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTA
                                                                                                                                Gaps
                                                                                                                          э,
                                                                 Length 618;
                                                              Score 357.4; DB 12; Length
Pred. No. 3.2e-115;
0; Mismatches 146; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 36609, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 60/191,078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          598 GCATCGGCGAGGCATGC 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John
APPLICANT: Carr, Grant
                                                              58.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGTCAGCGCGTCACGC
                                                           Query Match
Best Local Similarity 75.9°
Matches 468; Conservative
         US-10-282-122A-20027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-282-122A-36679
                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                     à
                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Syskind, Judith
APPLICANT: Syskind, Judith
APPLICANT: Wall, Daniel
APPLICANT: Wall, Daniel
APPLICANT: Carr, Grant
APPLICANT: Carr, Grant
APPLICANT: Carr, Grant
APPLICANT: Experimence, Robert
APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034
PRIOR PLILNG DATE: 2003-02-20
PRIOR PLILNG DATE: 2006-03-21
PRIOR PLILNG DATE: 2006-03-21
PRIOR PLILNG DATE: 2006-03-26
PRIOR FILING DATE: 2006-03-26
PRIOR FILING DATE: 2006-03-26
PRIOR FILING DATE: 2006-03-62
PRIOR PLILNG DATE: 2006-03-63
PRIOR PLILNG DATE: 2006-03-63
PRIOR PLILNG DATE: 2006-03-63
PRIOR PLILNG DATE: 2006-10-63
PRIOR PLILNG DATE: 2006-10-63
PRIOR PLILNG DATE: 2006-10-63
PRIOR PLILNG DATE: 2006-10-63
PRIOR APPLICATION NUMBER: 60/25,65
PRIOR PLILNG DATE: 2006-10-63

                                                                                                                                                   361 ACCAATCCCAAAAGCATTGTTTTTCTGGCCGCCTGTTTCCGGCAGTTTATCCTGCCGCAC 420
                                                                                                                                                                                                                                                                                   421 CAGCCGCAGGTGATGCAATATCTCGGGCGTCACCACCATCGTCGATGATATCATT 480
         357
                                                              360
                                                                                                                          CTGGCGGCGCTATTTCCGCAATTCATCATGCCGCAA 417
                                                                                                                                                                                                                                       477
                                                                                                                                                                                                                                                                                                                                                  GIGAIGAICGGITACGCCACCCIIGCICAACGGATIGCTCIAIGGATTAAAGGACCAAAG 537
                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGGGAGCGCTGTTA 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541 CAGATGAAGGCGTTGAACAAAGTCTTTGGTTCACTGTTTATGCTGGTCGGGGGCGCTGCTC 600
                                                                                                                                                                                                                              418 CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT
                                                                                                                                                                                                                                                                                                                                                                                                       481 drdardarrddcrardddacchddcdcadrrrccgcarddarcaaadddaad
TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC
                                                  301 ACGCTGGCGAAGGCGCAGACGGCAACTGTTCCAGCGCGGGGTGTTCGTAAATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 20027, Application US/10282122A
Publication No. US20040029129A1
GENERAL INFORMATION:
APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Haselbeck, Robert
APPLICANT: Obleen, Kari
APPLICANT: Cyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       598 GCATCGGCGAGGCATGC 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTCGGCCGGCCATGC 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
ORGANISM: Enterobacter cloacae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JS-10-282-122A-20027
                                                                                                                358
                                                                                                                                                                                                                                                                                                                                                  478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                  g
                                                                                                                ò
                                                                                                                                                                      셤
                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              쉼
```

540

900

480 537

417

```
178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 GGTTCAGGCCCCATCAATACCATGACGACGTCTATCAACCATGGATATCGTGGCGCAGCG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119 GCGICTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 CIGGGIACGCICTITICGCGCTCGCTCCTCGCTTTTGAATTCTGAATGGGCTGGCGCG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 GCTTATCTTATCTGGCTGGGTATCCAGCAATGGCG---CGCAGGCGCTATCGATCTGCAT 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 GGCTCTGGTGCAATCAACACTATGACCACCTCGAACCAACGGTTATCCGGCCG--GTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      358 ACCAATCCCAAAGTATTGTCTTTCTTGCCGCCCTGTTTCCGCAATTCATCATGCCGCAG 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGATGATCGGTTACGCCACCCTTGCTCAACGG--ATTGCTCTATGGATTAAAGGACCAA 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           238 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACTTAAA 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298 TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       298 adrotodocagadocaarodogorogoriginoaacogocoararitoroaaroa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          358 ACCAATCCCAAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATGCCGCAA 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          418 chaccechacrececheracricarreresechenearieresereserrereserand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                478 didaldaccedinaceccacaciesecrasececacireceseciesarinaakseaceaa 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               536 AGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGT 595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 Argaccriricaarggregriceccrarcraccrcaacrcregregregrerriches 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGACCITAGAAIGGIGGITTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA 60
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
PRIOR PELING DATE: 2000-05-26
PRIOR FILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-110-23
PRIOR PELING DATE: 2000-112-22
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR PILING DATE: 2001-12-22
PRIOR PELING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-16
PRIOR FILING DATE: 2010-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 GCTTCTATCGCCGGACTCCAGACCGGACTGGGGATACGTATCGTACTGGTGGCGTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 344.8; DB 12; Length 623;
Pred. No. 9e-111;
0; Mismatches 137; Indels 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Salmonella paratyphi A
US-10-282-122A-36679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 76.6%;
Matches 475; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
```

```
APPLICANT: Xu, H.
APPLICANTON: Identification of Essential Genes in Microorganisms
FILE BERERGE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR PELICATION NUMBER: 60/230,335
PRIOR FILING DATE: 2000-09-06
PRIOR PELICATION NUMBER: 60/242,578
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-22
PRIOR FILING DATE: 2000-10-22
PRIOR PELICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2000-12-22
PRIOR PELICATION NUMBER: 60/257,931
PRIOR FILING DATE: 2001-02-09
PRIOR PELICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR PELICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-09
PRIOR PELICATION NUMBER: 60/269,308
PRIOR PELICATION NUMBER: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATC--CGGCCGGTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGT-GGG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GITGGGACGCTATITICCCGCTCAGTGATTGCGTTTGAAGTGTTGAAGTGGGCCAGGCGCG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       chrédreccirectororaticorractedariticaanthaaactedecorderece 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 GGCTCGGGGGCCATTAACACAATGAGCACTGCCATCAGCCATGGTACCCGTGGGGTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 Argaccitragaciógregithaaccitarcigereacaacarigarcereactrireree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 274.8; DB 12; Length 621;
Pred. No. 4.9e-86;
0; Mismatches 197; Indels 3;
                                                                                                                                                                                                                                                             Sequence 41840, Application US/10282122A
Publication No. US20040029123A1
GENERAL INFORMATION:
APPLICANT: Wang, Liangsu
APPLICANT: Zamidio, Carlos
APPLICANT: Mandio, Cheryl
APPLICANT: Haselbeck, Robert
598 TGGCGTCGGCAAGACACGCG 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 67.5%;
Matches 416; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Trawick, John
Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ohlsen, Kari
Zyskind, Judith
Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Yersinia pestis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-282-122A-41840
```

```
RESULT 11
US-10-287-274-107/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-287-274-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                488
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Total Corresponding
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
CURRENT PELLING DATE: 2000-03-22-00
PRIOR PELLING DATE: 2000-03-21
PRIOR FILING DATE: 2000-03-21
PRIOR PLILING DATE: 2000-05-23
PRIOR PLILING DATE: 2000-05-26
PRIOR PLILING DATE: 2000-09-06
PRIOR PLILING DATE: 2000-09-06
PRIOR PLILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-12-22
PRIOR PLILING DATE: 2000-12-22
PRIOR PELLING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR PELLING DATE: 2001-02-09
GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAA 297
                                                  241 GCTTACTTAATTTGGCTTGGTATTCAACAATGGCGTGCAGCCGGGTCGCTTGACCTGCAT 300
                                                                                                                                                              drdardarridarrackárrraderacaktrarraderradarradarradarradarradar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGGAGCGCTGTTA 597
                                                                                                                                                                                                                         ACCAATCCCAAAAGTATTGTGTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAA 417
                                                                                                                                                                                                                                                                      361 ACCAATCCAAAAAGCATTGTTTTTTTTGCGCGCGTTATTTCCACAATTTGTACTGCCACAG 420
                                                                                                                                                                                                                                                                                                                                                                              541 CAAATGAAACTCTTGAACCGAATATTTGGCGGCCTATTTATGTTGATTGGTGCATTATTA 600
                                                                                                           TCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTTGTGAATCTC 357
                                                                                                                                                                                                                                                                                                                                     CAGCCGCAACTGAATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATTATT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1269, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Malone, Cheryl
APPLICANT: Ohlsen, Kari
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Carr, Grant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601 GCCACAGCGCGCAAAG 616
                                                                                                           298
                                                                                                                                                                                                                      358
                                                                                                                                                                                                                                                                                                                                     418
                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          598
                                                                                                                                                                                                                                                                                                                                                                                                                                             478
                                                                                                        ò
                                                                                                                                                        g
                                                                                                                                                                                                                                                                   g
ò
                                            d
                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ó
```

```
Sequence 107, Application US/10287274

Publication No. US20030181408A1

GENERAL INFORMATION:

APPLICANT: Porsyth, R. Allym

APPLICANT: Oblsen, Karity

APPLICANT: Oblsen, Karity

TITLE OF INVENTION: GENES ESSENTIAL FOR MICROBIAL PROLIFERATION AND ANTISENSE THERET

FILE REFERENCE: ELITRA.008DV1

CURRENT PELLON NUMBER: US/10/287,274

CURRENT FILING DATE: 2002-10-31

PRIOR FILING DATE: 1999-11-09

PRIOR FILING DATE: 2000-11-09

PRIOR FILING DATE: 2000-11-09

PRIOR FILING DATE: 2000-11-09

NUMBER OF SEQ ID NOS: 469

SOFTWARE: PSESEE for Windows Version 4.0

LENGTH: 263
                                                                                                                                                                                                                                                                                                                                                                                                         200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199 AAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATCATCCCGCAACAGCGCGCAAC 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATGCAGTATATCGTGCTCGCGTCACCACTATTGTGGTCGATATTATTGTGATGG 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGG 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             365 CCAAAAGTATTGTGTTTTCTGGCGCCCTATTTCCGCAATTCATCATGCCGCAACAGCCGC 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          484 ATC-GGTTACGCCACCCTTGCTCAACGGATTG--CTCTATGGATTAAAGGACCAAAGCAG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            139 TGATGCAGTATATGTGGTGCTCGGCGTCACCACTATTGTGGTCGATATTATTGTGATGATGATCG 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425 AACTGATGCAGTATATCGTGCTC-GGCGTCACCACTATTGTGGGTCGATATTATTGTGATG 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79 GTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGG 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                             368 AAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAAC
                                                                                                                                                                                                                                                                                                                                                                                               259 chácticaarcacarcaacarrrerrecaacacacacacacacaarccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         263 CCCCTACTCAATCGCGTCGACATTTGTTTCTACCGCGCAGTTTTTGTGAATCTCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         143 AACTGATGCAGTATATCGTGCTCGGGCGTCACCACTATTGTGGTCGATATTATTGTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        305 CCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                 ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 33.7%; Score 207.4; DB 14; Length 263; Best Local Similarity 94.3%; Pred, No. 2e-62; Matches 248; Conservative 0; Mismatches 11; Indels 4;
                                                                                                                                                                                                                         Length 259;
                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11; Indels
                                                                                                                                                                                                                Query Match
42.1%; Score 259; DB 12;
Best Local Similarity 100.0%; Pred. No. 1.1e-80;
Matches 259; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                        308 CTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  548 CGCTGAATAAGATTTTCGG 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19 CGCTGAATAAGATTTTCGG 1
; SOFTWARE: Patentin version 3.1; SEQ ID NO 1269; LENGTH: 259; TYPE: DNA ; CRGANISM: Escherichia coli US-10-282-122A-1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA ORGANISM: Escherichia coli
```

ω

255

g δ

```
433 CAGIAIAICGIGCICGGCGICACCACIAIIGIGGICGAIAIIAIIGIGAIGAICGGIIAC 492
                                                                                                                                                                                                                                                                                                         CTGGGAATCCAGCAGTGGCGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACT 312
                                                                                                                                                                                                                                                                                                                                                                                                                cricografircada antocceda da rada de contra contra contra contra de la 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAAAGT 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    316 crercacaageegeegeegestas and a samma s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              373 ATTGTGTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATG 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376 Arcerrirerradredearrarricedearrarrearedearedearedaredeee 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                436 CAGTICTIGGIICIGGGIAICACAACCGIIACIAITGAIGCGAIIGICAIGIICGGAIAC 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   493 GCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTG 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      496 ACGGCACTGGCTGCCCAGCTAGGTCGCTATATTCGTTCACCTAACATAATGACCAGAATG 555
                                                                                                                                                                                      TLE OF INVENTION: Identification of Essential Genes in Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   553 AATAAGATTTTCGGCTCGTTGTTTATGCTGCGGAGCGCTGTTAGCATCGGCGA 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATAAACTGTTTCGATGTTTATGGGCTGCGGAATGCTGTTGGCTACCGCCA 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: 60/269,308
REMAINING DATE: 2001-02-16
Remaining Prior Application data removed - See File Wrapper or PALM
NUMBER OF SEQ ID NOS: 78614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TILE KEFERENCE BLITKA, U34A, U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 30630, Application US/10282122A Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Mallow, Loady application APPLICANT: Mallone, Cheryl APPLICANT: Haselbeck, Robert APPLICANT: Chisen, Kari APPLICANT: Chisen, Kari APPLICANT: Chisen, Kari APPLICANT: Mall, Daniel APPLICANT: Trawick, John APPLICANT: Trawick, John APPLICANT: Yamamoto, Robert APPLICANT: Persyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: ELITRA.034A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Wang, Liangsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       313
                                                                                                                                                                                                                                                                                                   253
                                                                                                                                                                                                                                                                                                                                                                                                                256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     76 AACACTATGACCACCTCGCTCAACCACGGT--TATCCGGCCGGTGGCGTCTATTGCTGGG 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chacaaarceercinecrnercarahaaereerreecarreeaarreececrneere 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGC-GTGGGGTTGGGACGCTATTT 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
83 ATGGGGTTACGCCACCCTTGCTCAACGGGATGCCTCTAAGGGATTAAAGGCCCAAACCAA 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16 TGGTTTGCCTACCTGCTGACATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76 AACTCGATCAGCATGGTTTAAGTTATGGTACACGCCACTCATTAGGGGCGATTATCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Identification of Essential Genes in Microorganisms FILE REFERENCE: BLITEA, 034A.
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-202-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16 rescrirectrarcratercaccecerentriagratercecececeracecerr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Remaining Prior Application data removed - See File Wrapper or PALM. NUMBER OF SEQ ID NOS: 78614 SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Э,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 24.4%; Score 149.8; DB 12; Length 618; Best Local Similarity 55.5%; Pred. No. 7.3e-42; Matches 330; Conservative 0; Mismatches 262; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 40780, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR PELING DATE: 2000-03-21
PRIOR PELING DATE: 2000-03-21
PRIOR PELING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/203
PRIOR APPLICATION NUMBER: 60/2030,347
PRIOR PELING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR PILING DATE: 2000-09-09
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/242,578
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-11-27
PRIOR PILING DATE: 2000-10-09
PRIOR FILING DATE: 2001-02-09
                                                                                                                                                                                541 ATGAAGGCGCTGAATAAGATTTT 563
                                                                                                                                                                                                                                                        ATGAAGGCGCTGAATAAGATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wall, Daniel
Trawick, John
Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: DNA
; ORGANISM: Vibrio cholerae
US-10-282-122A-40780
                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
US-10-282-122A-40780
                                                                                                                                                                                                                                                                                 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      134
```

ઠે g ઠે g ò

```
61 GGCGCGGGTGCCATCGCCTCGATGTCCTGCGGCCTGCAATACGGTTTCCTGCGCGCTAC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179 -TTGGGACGCTATTTCCCGCTCACTGATTGCGTTTGAAGTGTTGAAGTGGGCGCAGGCGCG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 GAATCCGCGTGCGGCCGGTGGGCAAGCCGATGACGCTGGTGTTCCGCGGTTTTCTGGTC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  352 AATCICACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATG 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421 CCGACTGCTCCGCTGTTCATGCAGTACGTGATCATCGCCGCGACCATGGTCGTCGTCGAT 480
                                                 CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR FILING DATE: 2000-05-23
PRIOR PELING DATE: 2000-05-23
PRIOR PELING DATE: 2000-05-23
PRIOR PELING DATE: 2000-05-26
PRIOR PELING DATE: 2000-05-36
PRIOR PELING DATE: 2000-05-06
PRIOR APPLICATION NUMBER: 60/230,347
PRIOR PELING DATE: 2000-09-09
PRIOR PELING DATE: 2000-10-07
PRIOR PELING DATE: 2000-10-27
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-12-22
PRIOR PELING DATE: 2001-02-26
PRIOR PELING DATE: 2001-02-26
PRIOR PELING DATE: 2001-02-26
PRIOR PELING DATE: 2001-02-26
PRIOR PELING DATE: 2001-02-06
PRIOR PELING DATE: 2001-03-06
PRIOR PELING DATE: 2001-03-06
PRIOR PELING 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 Arcecacirca Aaccicacirca contration con a serio de contration de la Arcecación de la Arce
                INVENTION: Identification of Essential Genes in Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ATGACCTTAGAATGGTGGTTTGCCTACCTGACATCGATCATTTTAACGCTGTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 GTCTATTGCT - GGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 regaarecerregeécrecaéaraécecreéregececaearececearrerecesecese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         238 GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCG-----CCGCTGGTGCAATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 GCGTATCTGGTCTATCTGGGCATCAAACAGTGGCGCGCATCGCCCACCGACCTTGCCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              292 CITAAAICGCIGGCCICTACICAAICGCGICGACAITIGIICCAGCGCGCAGITITIGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 Aacarcascaaccaaascscrisarcricarccrescearccisceascaaricarcaas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           412 CCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
16.9%; Score 104; DB 12; Length 6
Best Local Similarity 54.3%; Pred. No. 1.1e-25;
Matches 278; Conservative 0; Mismatches 225; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                472 ATTATIGIGAIGAICGGITACGCCACCTIGC 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481 crahrcerchreecederracacaegereec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA ORGANISM: Pseudomonas syringae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-282-122A-33154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 33154
LENGTH: 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                БÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76 GCCTCGATGTCCTGCGGGTTGCAGTACGGCTTTGCGCGAGGCTACTGGAACGCGCTGGGC 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGGAATCCAGCAGTGGC--GCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTA 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCAATCG-CGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAATCTCACCAATCCCAAA 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              316 chececcacentracecricarecrecarearriceresicalecales 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             430 AIGCAGIAIAICGIGCICGGCGICACCACIAIIGIGGICGAIAIIAIIGIGAIGAICGGI 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAAGCAGATGAAGGCG 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                racaccedediececececeraceracegraciecentecececececeaeaagere 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                             75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            creckéArcedocredeceredeArceccarreredecedecerederecere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  196 GCGACCTCGCCACTCGCCTTTCAGCCTGATCAAGTCGTTCGGCGTGGCCTACCTGGTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                    16 TGGTTTGCCTACCTGCTGACATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16 redrirederretrefrederegerregecareaecenteaecereregecegesegeceare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTCAGACCGGACTGGCGATTCATATTGTGCTGGCTTGGCG-TGGGGTTGGGACGCTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256 crescegracecchardecadaceceacadeccrrahacacceareceareceare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            370 AGIATIGICITICIGCCGCGCGCTATITICCGCAATICATGATGCCGCAACAGCGCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGGTGATCTTCATGCTCGCGGTGCTGCCGCAGTTCATCGACCCGCACCAGCCGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           436 GCGCAATACCTGATCATGGCGCGCACCATGATCGTCGTCGTCGACCTGATCGTCATGGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGG
                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                    Length 630;
                                                                                                                                                                                                                                                                        Query Match
18.3%; Score 112.4; DB 12; Length
Best Local Similarity 53.5%; Pred. No. 1.2e-28;
Matches 324; Conservative 0; Mismatches 276; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-282-122A-33154
, Sequence 33154, Application US/10282122A
, Publication No. US20040029129A1
, GRNERAL INFORMATION.
                                                                                                                                                        ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Malone, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Trawick, John
Carr, Grant
Yamamoto, Robert
Forsyth, R.
SOFTWARE: PatentIn version SEQ ID NO 30630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       610 CATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGCG 621
                                                                                                                                                                                         US-10-282-122A-30630
                                                                          LENGTH: 630
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \stackrel{>}{\circ}
```

3,

60 9 180

291 300 420

471

```
염
                                                                                      ઠે
                                                                                                                               셤
                                                                                                                                                                                ò
                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                             ठ
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64 GGTGCCGGGGCAATTGCCTCGATGTCCAGGGGCCTGCAATACGGCTTCTGGCGTGGTTAC 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178 GTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTGAAGTGGGCAGGCGCG 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184 drederecereciredereciredeceacedericaderenearearearearearea 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 GICTATIGC -- TGGGCTICAGACCGGACTGGCGATICATATIGIGCTGGTIGGCG-IGGG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTACTTGATTTGGCTGGGAATCCAGCAGTGGCGCGCCGCT-----GGTGCAATTGAC 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 AIGACCTIAGAAIGGIGGIIIGCCIACCIGCIGACAICGAICAITITAACGCIGICGCCA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 ATGTCGATGGAAGTATGGTTAGGCTTTTTTGCCGCCTGCTGGGTGATCAGCCTTTCACCC 63
                                                                                                                                                                                                                                                                                                                              APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REPERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: 105/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 78614
SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 86.4; DB 12; Length 633;
Pred. No. 1.9e-19;
0; Mismatches 306; Indels 9
                Sequence 31699, Application US/10282122A Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR FILLING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR PILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR PILING DATE: 2000-09-09
PRIOR APPLICATION NUMBER: 60/245,578
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR PILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR PILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR PILING DATE: 2000-10-22
PRIOR PILING DATE: 2000-10-22
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR PILING DATE: 2001-02-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R FILING DATE: 2000-03-21
R APPLICATION NUMBER: 60/206,848
R APPLICATION NUMBER: 60/207,727
R APPLICATION NUMBER: 60/207,727
R APPLICATION NUMBER: 60/230,335
R APPLICATION NUMBER: 60/230,335
R APPLICATION NUMBER: 60/230,347
R FILING DATE: 2000-09-06
                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR APPLICATION NIMBER: 60/191,078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14.0%;
                                                                                  Mang, Liangsu
Zamudio, Carlos
Malone, Cheryl
Haselbeck, Robert
Ohlsen, Kari
Syskind, Judith
Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pseudomonas putida
                                                                                                                                                                                                                                                                    Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 49.5
Matches 309; Conservative
-122A-31699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-282-122A-31699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ID NO 31699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
```

```
244 GGCTACCTTGTGTACCTGGCCTACAAGCAGTGGCGTGCCCTGCCGATGGACATGAGCGAT 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            304 gaancaggegrigegeeegegaagegaageergageeriggrighteegegrigereiteeriggric 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       364 AACATCAGCAACCCCCAAGGCGCTGGTGTTCATGCTGGCGGTGCTGCCGGAGTTCCTCAAT 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cccanececcecarecrecida ana referencia de contra de contr
                                                                                                                                                                                                                                                             292 CTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTG 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       352 AATCTCACCAATCCCAAAAGTATTGTGTTTTCTGGCGGCGCTATTTCCGCAATTCATCATG 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGAT 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             472 ATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTCTATGGATTAAAGGA 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            484 criecriodridarideceddaniacaccederriodcrircecarerierrecearecriececace 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     544 CCCAAACAGCAGAAGCGTTTGAACCGCACCTTTGCCGGGTTGTTCATTGGTGCAGCCACC 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAAAGCAGATGAAGGCGCTGAATAAGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTTAGCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search completed: March 28, 2004, 20:43:08 Job time : 264.248 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Trecreccacerrecececes 627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             604
```

us-09-847-392-1\_copy\_557\_1171.rst

```
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 1
AQ859250/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                       March 28, 2004, 14:07:39; Search time 1953.09 Seconds (without alignments) 9403.168 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                          US-09-847-392-1_COPY_557_1171
615
1 atgaccttagaatggtggtt......tagcatcggcgaggcatgcg 615
                                                                                                                                                                                                                                                                                                                   55026578
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                              27513289 seqs, 14931090276 residues
                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                            OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                              IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_gss_pro:*
em_gss_rod:*
em_gss_phg:*
                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0 Maximum DB seq length: 20000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ew_gss_pln:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -_fun:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_estba::
em_estbum::
em_estin::
em_estin::
em_estpl::
em_estpl::
em_estpl::
em_htc::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_est5:*
em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_est2:*
gb_htc:*
gb_est3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Jest4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST: *
                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database :
                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                Searched:
                                                                                            Run on:
```

			Description		AQ859250 nbeb0011L	BZ548406 pacs1-60	AQ858095 nbeb00111	BZ566001 pacs2-164
SUMMARIES			ďΙ		AQ859250	BZ548406	AQ858095	BZ566001
			рв	1	28	28	28	78
			Match Length DB		473	1095	769	1199
	οNο	Query	Match	111111	20.7	13.9	12.8	9.1
			Score	!	127	85.4	78.6	55.8
		ilt	No.	1 1 1 1	-	Ŋ	m	4
		Result	4		υ			υ

04235	2111 BX462111	573	AY401573 Mus muscu	372	0.0	02	)57	143	9707 Sm	545 GM	5603 BX	041 Dr	581 31	920 01	3576 33	031 40	721 27	253 14	64	190 51	319 15	985 46	021 46	5945 733	505 AVS	3760 723	1391 BX	008 BX:	3385 AG	01	565	513	16	94	346900 sp32e(	55398	179229 813328	81 AL64378	10331	32225
042	S	5	AY401573	16	ä	2	8	4	Ö	10	C)	5	-	9	8	ä	96	5	BM087647	5	S S	5	2	36	55	12	4	3	5	풊	5	2	2	5	9	5	5	5	2	(3
14	13	53	29	m	σ,	m		N	œ	0	М	σ	0	0	a	0	0	0	N	N	0	0	a	4		4	m	m	N	σ	m	σ			0		4		m	m
(L)	4	m	990	Н	0	œ	4,	ᅥ	_	σ	œ	ß	φ	0	3	S	σ	н	a	m	7	7	æ	g	0	3	20	0	99	4	LO.	σv.	7	IU.	m	4	Ψ	30	0	m
	•	•	6.5							•			•																											
53	41	ö	39.8	è.	é.	œ,	œ.	m	۲.	37.6	7.	7	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36.8	ġ.	36	w	ъ.	ů.	S.	'n,	S.	ď.	35.2	'n	35
'n	9	7	œ	σ	10	11	17	13	14	15	J.6	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	33	40	41	42	43	44	45
υ	υ						υ		υ	U																	υ		U	υ	υ	U	υ						υ	υ
																		,																						

## ALIGNMENTS

AQ859250 110-14r CUGI Rice BAC Library (EcoRI) Oryza sativa (japonica cultivar-group) genomic clone nbeb0011L14r, genomic survey Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Spermatophyta; Vidiplantae; Streptophyta; Embryophyta; Tracheophyta;
Ehrhartoideae; Oryzeae; Oryzae; Inliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzaee; Oryza
I (bases 1 to 473)
Wing, R. A. and Deen, R. A.
A BAC End Sequencing Framework to Sequence the Rice Genome Unpublished (1998) Contact: Wing RA Clemson University Genomics Institute Clemson University 100 Jordan Hall, Clemson, SC 29634, USA Tel: 864 656 7288 Fax: 864 656 4293 Email: rwing@clemson.edu Seq primer: GGAAACAGCTATGACCATG AQ859250 AQ859250.1 GI:6209707 COMMENT

```
sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AQ858095
                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Sim
Matches 217;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                401
                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AQ858095
                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                         /gutan="unipoponica"
/gutan="unipoponica"
/dutivar="Nipponica"
/dutivar="Nipponica"
/clone="mbedinglay"
/clone="mbedinglay"
/clone="mbedinglay"
/clone="mbedinglay"
/clone="leaf"
/clone="leaf"
/clone="leaf"
/clone="leaf"
/clone="welcuts Rice BAC Library (EcoRI)"
/clone="welcuts page-claily those inhabiting highly
populated areas of the humid tropics and subtropics, rely
on rice as their primary source of carbohydrate.
/monocotyledonous rice is a diploid plant (In=24) with a
monocotyledonous rice is a diploid plant (In=24) with a
haploid genome equivalent of 411 Mbp (Arumqanathan and
Earle, 1991). The relatively small genome of rice, three
times larger than that of Arabidopsis, makes it suitable
for genomic studies. In order to facilitate positional
cloning, physical mapping and genome sequencing of rice,
we have constructed a BAC library from Cryza sativa,
Nipponbare variety using BCORI as the cloning enzyme. The
library contains 55,296 clones with an average insert size
of 121 Kb providing approximately 15 haploid genome
equivalents. The deep coverage allows the isolation a
particular sequence with a probability of 99.9 %. Three
high density filters, each containing 18,432 clones
(doubly spotted), represent the whole library for colony
screening and can be requested from the Clemson university
BAC/EST Resource Center (www.genome.clemson.edu)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSS 17-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  229 ATGACCTTAGAATGGTGGTTTGCCTACCTGACATCGATCATTTTAAGCCTGTCGACA 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTAT--CCGGCCGGTG 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169 GGCTCTGGTGCAATCAACACTATGACCACCTCGATCAACCACGGTTATCGCGGCGCGCATA 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGACCTTAGAATGGTGGTTTGCCTACCTGACATCGATCATTTTAACGCTGTCGCCA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pseudomonas aeruginosa
Bacteria, Proteobacteria, Gammaproteobacteria, Pseudomonadales,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pacs1-60_1079.81 pacs1-60 Pseudomonas aeruginosa genomic clone BZ548406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sims, E.E., Hastings, M.,
                                                                                       (japonica cultivar-group) "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (becomes it of 1095)
Spencer, D.H., Raymond, C.K., Smith, E.E., Sims, E.E., Hastings Burns, J.L., Kaul, R. and Olben, M.V.
Whole-Genome-Sequence variation among multiple isolates of Psedomonas aeruginosa library
C. Barteriol. (2002) In press
Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 473;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119 GCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTC 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109 AAGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTC 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20.7%; Score 127; DB 28; 92.4%; Pred. No. 6.5e-27; ive 0; Mismatches 10;
                                                                                     /organism="Oryza sativa
/mol_type="genomic DNA"
/strain="Japonica"
High quality sequence start: 41
High quality sequence stop: 415.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pseudomonadaceae, Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BZ548406.1 GI:27151987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 92.4
Matches 145; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 2
BZ548406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
```

```
AQ858095 769 bp DNA linear GSS 03-NOV-1999 nbeb0011L14f CUGI Rice BAC Library (EcoRI) Oryza sativa (japonica cultivar-group) genomic clone nbeb0011L14f, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Spermatophyta, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
I (Dases 1 to 769)
Wing,R.A. and Dean,R.A.
A BAC End Sequencing Framework to Sequence the Rice Genome
Unpublished (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       276 CGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCG-CGTCGACATTTGTTCC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101 CGCCACAGGCCTTGAGCACCGATGGCGAACGGCCTCTGGGGGCGACCGTTGACCCTGGTGC 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            335 AGCGCGCAGITITIGIGAAICICACCAAICCCAAAAGIAITGIGITITCIGGCGCGCTAI 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recereentrocreercakeecekacakareeeakaeeeerearerreareereedeeree 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            221 recedentearcacedeacedecacederecidecedaaraceraarearadeeed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     515 CTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATAAGATTTTTCGGCTCGTŢGT 574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  218 TGTTGAAGTGGGCAGGCGCGCGCTTACTTGACTTGGCTGGGAATCCAGCAGTGGC--GCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCCGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTCGGCGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       341 TACGCGTACTGCGTTCGCCGCCCCAGCAGCTGAGCTGAACCGTACCTTCGCCAGCCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                    /mol_type="genomic DNA"
/strain="1-60"
/db_xref="1-460"
/clone="pacs1-60"
/clone="pacs1-60"
/clone="calinical isolate 1-60 Whole genomic shotgun
library.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ب
ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1095;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        575 TTATGCTGGTGGGAGCGCTGTTAGCATCGGCGAGGCATGCG 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            restegerecesesestrecteseseseseseseseseses
                                                                                                                                                                                                                                             organism="Pseudomonas aeruginosa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13.9%; Score 85.4; DB 28;
llarity 54.1%; Pred. No. 3.7e-14;
Conservative 0; Mismatches 181;
                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Wing RA
Clemson University Genomics Institute
Clemson University
100 Jordan Hall, Clemson, SC 29634, USA
University of Washington
Box 352145, Seattle, WA 98105-2145, I
Tel: 2062216954
Fax: 2066857244
Email: craymond@u.washington.edu
Class: shotgun.
                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AQ858095.1 GI:6208552
GSS.
                                                                                                                                                                                                                   .1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
```

m

```
Bos indicus
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
CB042356/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                            /downer="mbeb0011119947"
/clone="mbeb0011119947"
/tissue_type="Leaf"
/tissue_type="Leaf"
/tissue_type="Leaf"
/tissue_type="Leaf"
/lob host="E. coli DH108"
/clone lib="CUGI Rice BAC Library (BCORI) site libe coli libe BAC Library (BCORI); Site 2: BCORI; Rice is the most important food crop in the world. Half of the world population, especially those inhabiting highly populated areas of the hund tropics and subtropics, rely on rice as their primary source of carbohydrate.

Monocotyledonous rice is a diploid plant (2n=24) with a haploid genome equivalent of 431 Mbp (Arumganathan and Earle, 1991). The relatively small genome of rice, three times larger than that of Arabidopsis, makes it suitable for genomic studies. In order to facilitate positional cloning, physical mapping and genome sequencing of rice, we have constructed a BAC library from Oryza sativa, Nipponbare variety using ECORI as the aloning enzyme. The library contains 55,296 clones with an average insert size of 121 Kb providing approximately 15 haploid genome equivalents. The deep coverage allows the isolation a particular sequence with a probability of 99.9 %. Three high density filters, each containing 18,432 clones (doubly spotted), represent the whole library for colony screening and can be requested from the Clemson University BAC/EST Resource Center (www.genome.clems)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GSS 17-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   658 ATGACCTTAGAATGGTGG-TTGCCTACCTGCTCATCGATCATTAAGC-CTGTCGCCA 715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ATGACCTTAGAATGGTGGTTTGCCTACCTGCTGACATCGATCATTTTAACGCTGTCGCCA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pacs2-164_5858.x1 pacs2-164 Peeudomonas aeruginosa genomic clone
pacs2-164_5858, genomic survey sequence.
BZS66001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Spencer, D. H., Raymond, C.K., Smith, E.E., Sims, E.E., Hastings, M., Burns, J.L., Kaul, R. and Olsen, M.V.
Whole-Genome-Sequence variation among multiple isolates of Psedomonas aeruginosa library
J. Bacteriol. (2002) In press
Contact: Chris K. Raymond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pseudomonas aeruginosa
Pseudomonas aeruginosa
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                         /organism="Oryza sativa (japonica cultivar-group)"
| mol_type="genomic DNA"
|strain="Japonica"
|cultivar="Nipponbare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCAACCACGGTTATC 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCTCTGGTGCAATCAACACTATGACCACCTCGCTCACCCACGGGTATC 764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12.8%; Score 78.6; DB 28; Length 769; 94.5%; Pred. No. 3.4e-12; ive 0; Mismatches 4; Indels 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
Tel: 864 656 7288
Fax: 864 656 4293
Email: rwing@clemson.edu
Seq primer: TAATACGACTCACTATAGGG
Class: BAC ends
High quality sequence start: 42
High quality sequence stop: 454.
                                                                                                                                                                                                                                                                                                   db_xref="taxon:39947"
clone="nbeb0011L14f"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1199 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BZ566001.1 GI:27194705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 1199)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 94.5
Matches 103; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BZ566001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             716
                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 4
BZS66001/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

```
231 bp mRNA linear EST 15-JAN-2003 4007198 BARC-EMBRAPA 316BOV Bos indicus cDNA clone 316BOV_1P12 Unknown, mRNA sequence. CB042356 GB042356.1 GI:27761601 EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata; Euteleostomi, Mammalia, Butheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea, Bovidae, Bovidae, Bovidae, Bos.

1 (bases 1 to 231)
da Mota,A.F., Sonstegard,T.S., Van Tassell,C.P., Matukumalli,L.K., Mood,D.L., Capuco,A.V., Brito,M.A., Martinez,M.L., Connor,E.E., Machado,M.A. and Coutinho,L.L.

Construction and Characterization of cDNA Libraries Generated from Ammary Gland Tissues of Holstein (Bos taurus) and Gir (Bos indicus) Cattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     128 GCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGCTGGTTGGCGTGGGGTTGGGACGC 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           589 Tracrescercescercescrisscrivacascardarcaasissircescercescristar 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           529 dereracerderedracedadraceaececededeacacadacerraadeacededargede 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 CTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGTGAATCTCACC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    469 accesacioneses contrator conferencia de accesaciones de esta de es
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 AATCCCAAAAGTATTGTGTTTCTGGCGGCGTATTTCCGCAATTCATGCCGCAACAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    409 AATCACAAGACGGTGCTCTGCATGCTCGCGGTGCGTCCCCAGTTCAGCGACCGGCATCAT 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             349 CCGCTGCTGGCGCAAGACCTGATCATGGCCGGCCCCATGATCGTCGTCGTCGTGATCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  649 ecresectricadarcescriseceroacadanaecearrererereseseseses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            188 TATTTTCC--CGCTCAGTGATTGCGTTTGAAGTGTGGAGGGGCGCGCGCCTTACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     246 GATTTGGCTGGGAATCCAGCAGTGGC----GCGCCGCTGGTGCAATTGACCTTAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421 CCGCAACTGATGCAGTATATCGTGCTCGCCGTCACCACTATTGTGGTCGATATTATTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xrefe"taxon:287"
/clone="pacs2-164_5858"
/clone_lib="pacs2-164"
/note="clinical isolate 2-164 Whole genomic shotgun
library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9.1%; Score 55.8; DB 28; Length 50.1%; Pred. No. 3.3e-05; ive 0; Mismatches 187; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aeruginosa"
University of Washington
Box 352145, Seattle, WA 98105-2145, USA
Tel: 206216954
Fax: 2066875294
Email: craymond@u.washington.edu
Class: shotgun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481 ATGATCGGTTACGCCACCCTTGCTCAACG 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             289 Argrecgagracaccececrecece 261

    1199
    /organism="Pseudomonas /mol_type="genomic DNA" /strain="2-164"

                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 50.1
Matches 195, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bos indicus (zebu)
```

50

Mon Mar

```
Centre National de Sequencage
                                                                                                                                                                                                                                                                                                                                                                                                                            .849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             260 CKKGSKKKÅ 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345 TTTTGTGAA 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CNS016GW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                105
                                                                                                                                                                                                                                                                                                                                                                                                                                    Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 7
CNS016GW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ARS
                                                 USDA, ARS, Animal and Natural Resources Institute
Bldg. 200 Rm3 BARC-Bast, Beltsville, MD 20705, USA
FIL: 3015048415
Fax: 3015048414
Email: amoca@cnpgl.embrapa.br
Single pass sequencing. Bases called and trimmed with phred
0.000925 using options -trim_alt ' -trim_fasta. Vector identified
by cross match using options -minmatch 12 -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 22-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGACATTIGITCCAGCGCGCAGTTTTGTGAATCTCACCAATCCCAAAAGTATTGTGTTT 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201 ceccerceirceircererresarrecreaccaarcreaccaacceaaeegearcrerre 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382 CTGGCGCGCTATTTCCGCAATTCATGCTGCGCAACAGCCGCAACTGATGCAGTATATC 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BX462111

BX462111 Homo sapiens B CELLS (RAMOS CELL LINE) Homo sapiens CDNA clone CSODGO01YP07 5-PRIME, mRNA sequence.

EX46211.

EX462111.1 GI:31029391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Mammaliai, Butheria; Primates; Catarrhini; Hominidae, Homo.
1 (bases 1 to 849)
Li,W.B., Gruber,C., Jessee,J. and Polayes,D.
Fvll.-length cDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone lib="BARC-EMBRAPA 116BOV"
/note="Organ: mammary, Vector: pUC19; Site 1: Smal;
Site_2: Smal; This mammary-derived cDNA 115rary was
Site_2: Smal; This mammary-derived cDNA 115rary was
created as part of a collaborative project between the Al
Gene Evaluation and Mapping Laboratory and the EMBRAPA
Dairy Cattle Research Center under the sponsorship of
WSDA, ARS/EMBRAPA-LABEX program in animal genomics. RNA
extracted on 6/8/02, RT with Superscript II at 37 deg C,
annealing temperature, PCR with 16mer AMS."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141 Arideredecerecrecede anticar de anticado con a contra con a contra con a contra co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 442 GIGCICGGCGICACCACTATIGIGGCGCATATIATIGIGATGATCGGTTACGC 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  81 Arccredogogadogargarentegroficarcorearcardoadegenardo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ch 8.6%; Score 53; DB 14; Length 231; 1 Similarity 56.6%; Pred. No. 8.7e-05; 98; Conservative 0; Mismatches 75; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Bos indicus"

mol_type="mank"
|strain="Brazilian Dairy Gir"
|db_xref="haxon:9915"
|/clone="31680"_IP12"
                                         Laboratory
                                                                                                                                                                                                                                                                                                                                                                                   FORWARD: GTTTCCCAGTCACGACGTTG
BACKWARD: TGAGCGGATAACAATTCACACAG
Flate: 1 row: P column: 12
Seq primer: GTTTCCCAGTCACGACGTTG
High quality sequence stop: 231.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="mammary"
/cell_type="epithelium"
/dev_stage="involuted"
/lab_host="K-12"
Contact: Adilson F. da Mota
Gene Evaluation and Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 6
BX462111/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
```

```
Direct Submission
Submitted (23-JUL-1999) Genoscope - Centre National de Sequencage :
Submitted (23-JUL-1999) Genoscope - FRANCE (E-mail : seqref@genoscope.cns.fr
- Web : www.genoscope.cns.fr)
Determination of this BAC-end sequence was carried out as part of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              165 TGGTTGGCGTGGGGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTGAA 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     320 TGSNSCN9KKSAAKTATSGSGSKKKGSKTASTTSKKKSSKSKKKSSTSKKKKSKSKKKA 261
Drosophila melanogaster genome survey sequence T7 end of BAC BACN16011 of DrosBAC library from Drosophila melanogaster (fruit F1y), genomic survey sequence.
AL106730 GI:5623541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      440 TIGCKIGCKKGCKKGCKKGCKKGCKKGCCKKKGCTSTISTISKKSKKKKSGSKKGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         500 ingrecidentricerreciriserritaciningececectarrecagececearried
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            225 GIGGGCAGGCGCCTTACTIGATITGGCTGGGAATCCAGCAGTGGCGCGCGCTGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             285 AATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGCGATTCATATTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster (fruit fly)
Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 6.7%; Score 41; DB 13; Length 849; Best Local Similarity 21.3%; Pred. No. 0.77; Matches 53; Conservative 86; Mismatches 110; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                                                                                        /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1039 bp
```

395 143 455 203

Gaps

Ä

```
/clone="CSODAGINITIE"
/tissue type="KEUROSILASTOMA"
/tissue type="KEUROSILASTOMA"
/clone lib="Homo sapiens NEUROBLASTOMA"
/note="Wedtor: PCMVSPORT 6; lst strand cDNA was primed
with a NotI-oligo(dT) primer. Five prime end enriched,
double-strand cDNA was digested with Not I and cloned into
Library was not normalized."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BX416727 BX416727 Homo sapiens NEUROBLASTOMA Homo sapiens cDNA clone CSODA011Y114 5-PRIME, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     103 GGTTATCCGGCCGGTGGCGTCTATTGCTGGGCCTTCAGACCGGACTGGCGATTCATATTGT 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
1 (Dases 1 to 712)
14 W.B., Gruber, C., Jessee, J. and Polayes, D.
Full-length cDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                                                                     337 crearigradecerceacadracaacariricreradecreracric-creecerar
                                                                                                                                                                                                                                                                                                                                 84 GACCACCTCGCTCAACCACGGTTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                        144 GACTGGCGATTCATATTGTGCTGGTTTGGCGTGGGGTTGGGGACGCTATTTTCCCGCTCAGT
                                                                                                                                                                                                                                          24 CTACCTGCTGACATCGATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                456 cacimaceenecaececeiteirenearchececeitereececeiteereaceinearee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Genoscope
Genoscope - Centre National de Sequencage
Genoscope - Centre National de Sequencage
BP 191 91006 BVRY cedex - France
BMail: seqref@genoscope.cns.fr Web: www.genoscope.cns.fr
Library was constructed by Life Technologies, a division of
Invitrogen. Contact : Feng Liang Email : fliang@lifetech.com U
http://fulllength.invitrogen.com/ InvitroGen Corporation 1600
Faraday Avenue Genoscope sequence ID : CSODA011BE07QP1.
                                                                                                                                                                                                                                                                                                                                                                         396 gaccicicarcicanacinegrosmicnicacicacacacacacicoccicicacacacic
                                                                                                                                                      Length 990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 13; Length 712;
                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94; Indels
                                                                                                                                                      6.5%; Score 39.8; DB 29;
larity 52.1%; Pred. No. 1.9;
Conservative 0; Mismatches 102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               204 GATTGCGTTTGAAGTGTTGAAGTGGGCAGGCGCGG 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ecreccerridescraricecrececrecacidade 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match
6.4%; Score 39.4; D:
Best Local Similarity 3.2%; Pred. No. 2.1;
Matches 8; Conservative 147; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
  /mol_type="genomic DNA"
/db_xref="taxon:10090"
                                                                 /gene="GPR7"
/locus_tag="HCM0935"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BX416727.1 GI:30765629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BX416727
                                                                                                                                                        Mac.
Local Sim
                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BX416727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   990 bp DNA linear GSS 15-DEC-2003
VIRTUAL TRANSCRIPT, partial sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             http://www.edgp.ebi.ac.uk -. This Drosophila melanogater BAC library (Dros BAC) was made by Alain Billaud at CEPH (Centre d'Etude du Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector pBelobACII.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glanowski, S., Nielson, R., Lu, F., Murphy, B., Ferritera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J., Adams, M.D. and Cargill, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
collaboration with the European Drosophila Genome Project (EDGP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Clark, A.G. Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGCTTCAGACCGGGACTGGCGATTCATATTGTGCTGGTTGGCGTTGGGGTTGGGACGCTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         889 KGTTTTBGGVGGTTTTGTVKTKTHDGKTGBTGCCCTTYBYCCKGSGGTTGKYCYYCCCYT
                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                   Length 1039;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                         75;
                                                                                                                                                                                                                                                                                                                                                                                                 1 6.6%; Score 40.6; DB 29; Similarity 30.6%; Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                              54; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Mus musculus"
                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY401573
Mus musculus GPR7 gene,
genomic survey sequence.
AY401573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AY401573.1 GI:39757562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 990)
                                                                                                                                                                                                                                                                                                                                                                                                                                              57; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : ::||
KTKKGG 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          252 GCTGGG 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1009
                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
AY401573
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                       ORIGIN
```

ð d δ 셤 ð ద à ô

Gaps

URL

\_1171.rst

, අ

8

ઠે

ò g

ò

```
CES (Neazaki Y.) Furuno, M., Kasukawa, T., Adachi, J., Bono, H., Kondo, S., Nikaido, I., Osato, N., Saito, R., Suzuki, H., Yamanaka, I., Kiyosawa, H., Yagai, K., Tomaru, Y., Hasegawa, Y., Nogami, J., Schonbach, C., Gojobori, T., Baldarelli, R., Hill, D. P., Bult, C., Hume, D.A., Quackenbush, J., Schriml, L.M., Kanapin, A., Matsuda, H., Batalov, S., Belsel, K.W., Blake, J.A., Barsic, V., Chothia, C., Corbani, L. B., Cousins, S., Dalla, B., Dragani, T.A., Fletcher, C.F., Forrest, A., Frazer, K.S., Gaasterland, T., Gariboldi, M., Glesi, C., Godzik, A., Gough, J., Grimmond, S., Hirokawa, N., Tazer, K.S., Gaasterland, T., Kawaji, H., Kawasawa, Y., Kedierski, R.W., King, B.L., Konagaya, A., Kurochkin, I.V., Lee, Y., Lenhard, B., Loons, P.D., Maltais, D., Kanai, A., Kawaji, H., Kawasawa, Y., Kedierski, R.W., King, B.L., Konagaya, A., Kurochkin, I.V., Lee, Y., Lenhard, B., Loons, P.D., Magabina, T., Marchionni, L., McKenata, J.U., Miki, H., Nagabina, T., Nato, J.J., Reed, J.C., Red, J.J., Rad, J., Rang, B. Z., Ringwald, M., Suhali, T., Reed, J.C., Red, J.J., Rad, J., Rang, B. Z., Ringwald, K., Sullain, R., Schou, M., Schou, M., Schou, M., Yang, I., Wallestedt, C., Wang, Y., Warcanabe, Y., Wallen, J., Wanger, L., Wahnestedt, C., Wang, Y., Warcanabe, Y., Wallen, J., Wang, J., Wang, Y., Warcanabe, Y., Warkawa, T., Fukuda, S., Hara, A., Hashizume, W., Imotani, X., Iebhi, Y., Itoh, M., Kagawa, I., Miyazaki, A., Yoshino, M., Waterston, R., Lander, E. S., Itoh, M., Kagawa, I., Miyazaki, A., Yoshino, M., Waterston, R., Lander, E. S., Rogers, J., Blinney, E. and Hayashizaki, Y. Roges, J., Blinney, E. and Hayashizaki, Y. Roges, J., Shibata, Y., Rogers, J., Shibata, Y.,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Yoshihide Hayashizaki

Contact: Yoshihide Hayashizaki
Laboratory for Genome Exploration Research Group, RIKEN Genomic
Sciences Center (GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
Tel: 81-45-503-9216
Fax: 81-45-503-9216
Fax: 81-45-503-9216
Fax: 81-45-503-9216
Fax: 81-45-103-921
Fax: 81-45-103-921
Fax: 81-45-103-921
Fax: 81-45-103-921
Fax: 81-45-103-921
Fax: 81-45-103-92

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 17-DEC-2002
                                CGCGCCGCTGGTGCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTG 330
                                                                                                                                                                                 TICCAGCGCGCAGITITIGIGAAICICACCAAICCCAAAAGIAITGIGITITCIGGCGGCG 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  685 bp mRNA linear EST 17-DEC-20
BY724027 RIKEN full-length enriched, adult male hypothalamus Mus
musculus cDNA clone A230077K02 5', mRNA sequence.
                                                                        Bukaryota, Metazoa, Chordata,
Mammalia, Butheria, Rodentia,
1 (baseg 1 to 685)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mature 420, 563-573 (2002)
                                                                                                                                                                                                                                                                                                                                                                                    928 DITIKISBSYTWSTVTKS 945
                                                                                                                                                                                                                                                                                                                                   391 CTATTTCCGCAATTCATC 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BY724027.1 GI:27137144
                                                                                                                                                                                      331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
BY724027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                             ď
                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                      ď
                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GSS 26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (23-JUL-1999) Genoscope - Centre National de Sequencage: BP 1919 91006 EVRY cedex - FRANCE (E-mail: segref@genoscope.cns.fr - Web: www.genoscope.cns.fr)
Determination of this BAC-end sequence was carried out as part of a collaboration with the European Drosephila Genome Project (BDGP) - http://www.edgp.ebi.ac.uk - This Drosephila melanogaster BAC library (Dros BAC) was made by Alain Billaud at CBPH (Centre for Eude dr Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGCTCAACCACGGTTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCGGACTGGC 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          redacchanalesececececementesersecesecireserresecakersa 687
                                                                                                                                                                                                                              282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITGAAGTGTTGAAGTGGGCAGGCGCGCGCTTACTTGATTTGGCTGGGAATCCAGCAGTGG 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CNS00Z1D
Drosophila melanogaster genome survey sequence T7 end of BAC
BACN01C03 of DrosBAC library from Drosophila melanogaster (fruit
                                                                                                                     163 GCTGGTTGGCGTGGGGTTGGGACGCTATTTTCCCGCTCAGTGATTGCGTTTGAAGTGTTG
                                                                                                                                                                                                                                                                                                                                                                                283 GCAATTGACCTTAAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCA
                                                                                                                                                                                                                          GATTCATATTGTGCTGGTTGGCGTTGGGACGCTATTTTCCCGCTCAGTGATTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster (fruit fly)
Drosophila melanogaster
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Phydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Drosophila melanogaster"
/mol_type="genomic DNA"
/db_xref="taxon.7227"
/clone="BACNOIC03"
/clone lib="DrosBAC"
/plasmid="peloBACI"
/note="end : T?"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 6.4%; Score 39.2; DB 29; Best Local Similarity 22.0%; Pred. No. 3.1; Matches 70; Conservative 109; Mismatches 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fly), genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
1. .1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL097099.1 GI:5608710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     343 GTTTTTGTG 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              687 KKKKKKK 695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
CNS00Z1D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
```

à d ò 셤 ò

```
AL628057 AGC-gastrula Silurana tropicalis cDNA clone TGas022011 5',
                                                                                                                                                                                                                                                       Silurana tropicalis (western clawed frog) Silurana tropicalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.3%; Score 38.6; DE Local Similarity 50.8%; Pred. No. 3.5; nes 92; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/db_xref="taxon:8364"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     one="TGas022011
                                                                                                                               MRNA sequence.
AL628057
AL628057.2 GI:38448162
                                                                                                                                                                                                                                                                                                                                                                                                       Xenopodinae; Silurana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sanger Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   475 A 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                 KEYWORDS
SOURCE
ORGANISM
                               AL628057/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human Genome Sequences Mann. Genome. 12, 673-677 (2001)

Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes. Genome Res. 10 (10), 1617-1630 (2000)

RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000)

Computer-based methods for the mouse full-length cDNA incorporation sequence clustering for construction of a nonredundant cDNA library. Genome Res. 11 (2), 281-289 (2001)

CONA library was prepared and sequenced in Mouse Genome Encyclopedia: Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN.

Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACCACCTCGCTCAACCACGGTTATCCGGCCGGTGGCGTCTATTGCTGGGCTTCAGACCG 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144 GACTGGCGATTCATATTGTGCTGGTTGGCGTTGGGGTTGGGACGCTATTTTCCCGCTCAGT 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 443 crcarreradecegredacidadadadacirricreradecireracire-credecereir 501
                                                                                           Computational Analysis of Full-Length Mouse CDNAs Compared with
Sano, H., Sasaki, D., Sato, K., Shibata, K., Shiraki, T., Tagami, M., Takeda, Y., Waki, K., Watahiki, A., Muramatsu, M. and Hayashizaki, Y. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCGCCGACCGATACCTGGTGGTTCTGGCCACAGAGTCGCGCCGCCGGGTGTCCGGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cachracechecacecenered and a construction of the construction of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTACCTGCTGACATCGATCATTTTAACGCTGTCGCCAGGCTCTGGTGCAATCAACACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prepare mouse tissues.
Please visit our web site (http://genome.gsc.riken.go.jp) for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lib="RIKEN full-length enriched, adult male
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 685;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 38.8; DB
Pred. No. 3.1;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tissue_type="hypothalamus"
dev_stage="adult"
lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone="A230077K02"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGCCCTTTGCGGTATT 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATTGCGTTTGAAGTGTT 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Simi
Matches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
BG664436 SAT DRG Library Rattus norvegicus CDNA clone DRABDH02 5',
                                                                                                                                                                                                                                                                                                                                           Hinkton, Cambridgeshire, CB10 15A, UK
Email: trop@sanger.ac.uk
Email: trop@sanger.ac.uk
This sequence is from a Xenopus Gene Collection (XGC) library
constructed by Aaron M. Zorn.
cDNA was oligo dT primed from 5ug of poly A+ RNA from stages 10-13
gastrulae. EcoR.NotI cut cDNA was then ligated into pCS107 with
EcoRI at the 5' end and NotI at the 3' end.
Vector: pCS107; Site 1: EcoRI; Site_2: NotI
Host: Escherichia coli XL1-blue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                252 AAATAGCATGAATTGTTTCCATTGCTTCAAGTTTGGTTTCATGGCTCAGTTTTGCTCTGG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pCS107; Site 1: BCORI; Site 2: NotI; cDNA was oligo dT primed from Sug of poly A+ RNA from stages 10-13 gastrulae. ECORI.NotI cut cDNA was then ligated into pCS107 with BCORI at the 5' end and NotI at the 3' end."
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Amphibia, Batrachia, Anura, Mesobatrachia, Pipoidea, Pipidae,
                                                                                                 1 (bases 1 to 642)
Croning, M.D.R., Ashurst, J.L., Taylor, R., Zorn, A.M. and Rogers, J. Sanger Xenopus tropicalis EST project 2001 (11_2003)
Unpublished (2003)
On Nov 2, 2001 this sequence version replaced gi:16597540.
Contact: Huckle B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295 AAATCGCTGGCCTCTACTCAATCGCGTCGACATTTGTTCCAGCGCGCAGTTTTTGTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            355 CTCACCAATCCCAAAAGTATTGTGTTTTCTGGCGCGCTATTTCCGCAATTCATCATGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               192 Tretrengeactractgangangarreaggaacacgaracergarecreererer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               415 CAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCACTATTGTGGTCGATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagaadcagaadagacagcaagtagcagagagcagccagcattagtagaatagaact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="TGas022011"
/dev stage="dgstrulla (stages 10.5-12 mixed)"
/lab_host="Bscherichia coli XL1-blue"
/clone_lib="XGC-gastrula"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 9; Length 642;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sanger Xenopus tropicalis EST project 2001
TROPICALIS SEQUENCE ID: TGas022011.plkSP6
Sequencing primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Silurana tropicalis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG664436
LOCUS
DEFINITION
```

```
/note="vector: pBeloBACI1; Site 1: Hin dIII; Constructed in the laboratory of Dr. Denis Le Paslier at the Fondation Jean Dausset, CEPH, Paris, France. Briefly, Schistosoma mansoni agarose embedded DNA was partially digested with Hin dIII. High molecular weight fragments were ligated in pBeloBACI1 digested with Hin dIII. The average insert size is 100 kb. Total clone coverage: approx. 7.95 X the haploid genome. Further information can be found in Le Paslier et al. (2000) Construction and characterization of a Schistosoma mansoni bacterial artificial chromosome library. Genomics 65: 87-94."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE659545 1798 bp mRNA linear EST 24-MAY-2001 GM700010A10A1 GM-r1070 Glycine max cDNA clone Gm-r1070-3841 3',
   Eukaryota, Metazoa, Platyhelminthes; Trematoda; Digenea; Eukaryota, Metazoa, Platyhelminthes; Trematoda; Digenea; Eukaryota, Strigeldida; Schistosomatoidea; Schistosomatoidea; Schistosomatoidea; Schistosomatoidea; Schistosomatoidea; Schistosoma Loason, Itosa, Malek, J., Koo, H., Loverde, P.T. and El-Sayed, N.M.

Use of end sequences from Schistosoma mansoni (Puerto Rico strain)
Sml BAC library for gene discovery and map construction
Unpublished (2001)
AL Octact: Najib M. El-Sayed
Contact: Najib M. El-Sayed
Department of Eukaryotic Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville, MD 20850, USA
Tel: 301 838 0208
Fax: 301 838 0208
Email: nelsayeddetigr.org
Email: nelsayeddetigr.org
Clones are derived from the Schistosoma mansoni (Puerto Rico) Sml
BAC library. For clone availability, please contact Dr. Najib
El-Sayed at TIGR (Inelsayeddetigr.org) or Dr. Phillip Loverde at
Clones are derived from Vork, Buffalo, New York, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTTCTGGCGGCGCTATTTCCGCAATTCATGATGCCGCAACAGCCGCAACTGATGCAGT 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                352 rearcordendendendendendendandandendendendendendendendende 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             437 ATAICGIGCICGGCGICACCACIAIIGIGGICGAIAIIAIIGIGAIGAICGITACGCCA 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Puerto Rico strain)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      292 recrecrecrecrecrecrearearearearearearearearearearearea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         497 CCCTTGCTCAACGGATTGCTCTATGGATTAAAGGACCAAAGCAGATGAAGGCGCTGAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 6.1%; Score 37.6; DB 28; Length 475; Best Local Similarity 48.2%; Pred. No. 5.8; Matches 106; Conservative 0; Mismatches 114; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATTTTGGACATGAGGTGTTTTGTGACGATGACGATGAT 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      557 AGATTTTCGGCTCGTTGTTTATGCTGGTGGGAGCGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Schistosoma mansoni"
/mol_type="genomic DNA"
/strain="Puerco Rico"
/db_xref="taxon:6183"
/clone="Sn1-41P23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:9985437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: M13 For Class: BAC ends.
Schistosoma mansoni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
BE659545
BE659545.1 GI:5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
BE659545/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                      JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                       E facture of the state of the s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BH209707 475 bp DNA linear GSS 15-NOV-2002 Sml-41P23.TF Sml Schistosoma mansoni genomic clone Sml-41P23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  204 GITTATTCCAGCCGAGATCTCCCACAAACTATGGACCAAATGCCAGACCAGTTTAATGA 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  438 TATCGTGCTCGCGTCACCACTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCAC 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               264 CCTTGTTATCAGCGATGGCTCTTCTCTGGAAGATCTTGTTGTGAGAGGAGCAATCTGGATCC 323
                                                                                                                                                                                      Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GITICIGGCGGCGCIAITICCGCAAITCAICAICCGCAACAGCCGCAACIGAIGCAGIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.2%; Score 38; DB 12; Length 510;
53.3%; Pred. No. 4.6;
.ive 0; Mismatches 70; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tissue_type="dorsal root ganglion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .510
/organism="Rattus norvegicus"
/mol_type="mRNA"
strain="Sprague-Dawley"
/db_xref="taxon:10116"
/clone="DRABDH02"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'dev_stage="adult"
'clone_lib="Rat DRG Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTGCTCAACGGATTGCTCTATGGATTAA 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        324 charicchahagahahharrcchadagahah 353
                                                                                                                      Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          iocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genomic survey sequence
BH209707
BH209707.1 GI:16388592
                                                                BG664436.1 GI:13886358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GSS.
Schistosoma mansoni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80; Conservative
                                                                                                                                                              Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seg primer: T3
POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                     BG664436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
BH209707/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
```

ö

```
1. 758

// Organism="Clothe max"
// Mol_type="mRNA"
// Mol_type="mRNA"
// Mol_type="mRNA"
// Lone="max.1070-3847"
// Clone="ib="max.1070-3847"
// Clone="ib="max.1070-3847"
// Clone="ib="max.1070-3847"
// Clone="max.1070-3841"
// Clone="ib="max.1070"
// Mole="max.1070"
// Mole="m
                                                                                                                                                                                                                                                                         Vodkin, L., Kelm, P., Shoemaker, R., Retzel, E., Khanna, A., Coryell, V., Rephiding, J., Raph, C., Shoop, B., Pardinas, J., Liu, L. and Lewin, H. A Functional Genomics Program for Soybean (NSF 9872565) Unpublished (1999)
Unpublished (1999)
Unpublished (1999)
Conter Extra AlbeStaga corresponding to Gm-c1016-1844 (5')
Contact: Vodkin, L.O., PI, A Functional Genomics Program for Soybean (NSF 9872565)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                619
                                                                           Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, rosids, eurosids I, Fabales, Fabaceae, Papilionoideae, Phaseoleae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            458 CTATTGTGGTCGATATTATTGTGATGATCGGTTACGCCACCCTTGCTCAACGGATTGCTC 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lewin, H. A., Director, Keck Center for Comparative and Functional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   678 charcennarcenharcenfernarcancantelacentracentracentracenare 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       University of Illinois
Edwin R. Maddgan Building, 1201 W. Gregory, Urbana, IL 61801, USA
Tel: (217) 244-6147
Fax: (217) 333-4582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                398 GGCAATTCATCATGCCGCAACAGCCGCAACTGATGCAGTATATCGTGCTCGGCGTCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            738 CHNNATTHNINNINGTTAAAACACCHNINNICTHNINNINGHTATTATTATATATATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6.1%; Score 37.6; DB 10; Length 798; 50.4%; Pred. No. 7.9; tive 0; Mismatches 66; Indels 0
        Glycine max (soybean)
                                                                                                                                                                                                          Glycine.
1 (bases 1 to 798)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 67; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
```

```
Qy 518 TATGGATTAAAGG 530

Db : 618 TATCGTCTCGAAG 606
```

Search completed: March 28, 2004, 18:21:30 Job time: 1968.09 secs

```
Aay79298 E. coli R
Aay39295 F. coli L
Abu28287 Protein e
Abu4858 Protein e
Abu4868 Protein e
Abu44939 Protein e
Abu44939 Protein e
Abu460100 Protein e
Abu48040 Protein e
Abu38690 Protein e
Abu38690 Protein e
Abu39959 Protein e
Abu39959 Protein e
Abu39959 Protein e
Abu16949 Protein e
Abu16949 Protein e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein e
Protein e
Protein e
Protein e
Protein e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Acinetoba
Acinetoba
                                                                                                                                                                                                                  (without alignments)
965.371 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                   US-09-847-392-2
1061
1 MTLEWWFAYLLTSIILTLSP.......KIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Abg29211 NAbg29210 NAda35521 Ada35872 Ada33824 Ada33824 NAda38824 NAda33824 NAda38824 NAda38824 NAda38824 NAda38824 NAda388824 NAda388824 NAda388824 NAda38888 NAda3888 NAda3888 NAda3888 NAda3888 NAda388 NAda38 NAda388 NAda388 NAda
                                                                                                                                                                                  March 24, 2004, 21:08:16; Search time 60 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1586107
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1586107 segs, 282547505 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                       - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABU44939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADA33616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABU23178
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genesem2001s:*
genesem2002s:*
genesem2003as:*
genesem2003bs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum Match 0%
Maximum Match 100%
Listing first 45 su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A_Geneseq_29Jan04:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           geneseqp1990s:*geneseqp2000s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 geneseqp1980s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing:
                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 s
e
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10001

10
                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                       OM protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database :
                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
```

Ada36250 Acinetoba	Ada36962 Acinetoba	O.	Aar87527 Mel-linke	Aaw73358 S. colwe	Aag92664 C glutami	1526 A	Abm67507 Photorhab	Aab40407 Human ORI	Ξ	Aag89911 C glutami	Ω		84 A	Abm67782 Photorhal	Aab01786 Escherich	Aab01788 Escherich	Ada35408 Acinetoba	Abg29209 Novel hum	1637
4DA36250	ADA36962	ABM68999	AAR87527	AAW73358	AAG92664	ADA34526	ABM67507	AAB40407	ABP00692	AAG89911	AAG81807	ABP39763	ADA35184	ABM67782	AAB01786	AAB01788 ·	ADA35408	ABG29209	AAB11637
-	•			-	-			-							·				•
-	-				•	-						'n						4	
240	235	201	153	153	207	245	205	130	130	226	210	224	222	213	223	195	214	191	225
		m	G	9.	۲.	σ.	ω.	9.	9.	۲.	9.	2.6	'n	σ.	o.	o.	۲.		9.
٥.	ď.		•			m	m	m	ന	N	N	2	N	Н	Ч	Н	ч	ч	Η.
16.0	'n	14.	14.	14	14	H	Н	Н	Н	Н	Н	Н	П	٦	1	Н	7	_	_
	15.	.5 14.	55 1	٦	0	147 1	Н	Н	144 1	134.5 1	7	10	-	٦	126.5 1	1	7	ص	

## ALIGNMENTS

Homoserine resistance; RhtB protein; L-homoserine; L-alanine; L-isoleucine; L-valine; L-threonine. Belareova AV; E. coli RhtB protein imparting homoserine resistance Zakataeva NP, Aleoshin VV, AAY79298 standard; protein; 205 AA 99EP-00118581. 98RU-00118425. (first entry) (AJIN ) AJINOMOTO CO INC Escherichia coli. Livshits VA, 'Tokhmakova IL; 20-SEP-1999; 13-OCT-1998; 18-JUL-2000 EP994190-A2 19-APR-2000 AAY79298

WPI; 2000-273530/24. N-PSDB; AAZ94405. Novel RhtB protein, useful for generation of L-homoserine resistance in Escherichia bacteria and large-scale production of e.g. L-homoserine and L-alanine.

Claim 1; Page 11-12; 14pp; English.

The present sequence is that of the novel Escherichia coli K-12 protein, RhtB, which participates in resistance to L-homoserine. Amplification of the rhtB gene (see AA294405) results in an improvement of the amino acid productivity of E. coli. The invention provides: a protein comprising the present sequence or including a deletion, substitution, insertion and/or addition of 1 or more amino acids and having the activity of making a bacterium resistant to L-homoserine; DNA encoding RhtB; a bacterium, especially of the genus Escherichia, in which L-homoserine resistance is enhanced by amplifying the copy number or increasing the expression rate of the rhtB DNA, the DNA being carried on a multicopy vector or on a transposon; and a method for producing an amino acid by cultivating the

```
The present sequence is the L-homoserine resistance protein, RhtB, from Escherichia coli. The coding sequence may be used to impart L-homoserine resisterance on E. coli bacteria, which would be useful for producing a high yield of L-homoserine. L-homoserine resistance means that the bacteria will be able to grow on a minimal medium containing L-homoserine at a concentration at which the corresponding wild-type strain would not grow. Since the transformed bacteria can grow on the minimal medium, it can synthesise L-homoserine, which accumulates. The accumulated amino acids can then be removed from the culture medium. The bacterium of the
                                                                                                                                                   ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40
 ü
                                                                                                                                                                                                                                                                                                                                             121 NPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQ 180
                                                                                                                                                                                                                                                   GTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT 120
                                                                                                                                                                                                                                                                                     GTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT 120
                                                                                                                                                                                                                                                                                                                        NPKSIVFLAALFPOFIMPQOPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQ 180
                                                                                                                                                                                                                   9
                                                                                                                                                                                     9
 acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    due
                                                                                                                                                                                                                   1 MTLEWWFAYLLTSILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWRGV
                                                                                                                                                                                   MILEWWFAYLLTSIILTLSPGSGAINTMITSLNHGYPAGGVYCWASDRTGDSYCAGWRGV
                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  enhanced RhtC protein activity, used to produce L-threonine resistance homoserine, L-valine and L-leucine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L-threonine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Belareva AV, Tokhmakova
bacterium in a culture medium to produce and accumulate the amino the medium, from which it is recovered. The method is used for the production of L-homoserine, L-alanine, L-isoleucine, L-valine or L threonine (all claimed)
                                                                                                                                                   °
                                                                                                                  Length 205;
                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L-homoserine resistance; L-homoserine synthesis; rhtB;
                                                                                                                  Query Match 100.0%; Score 1061; DB 3; Best Local Similarity 100.0%; Pred. No. 1.2e-112; Matches 205; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            coli L-homoserine resistance protein, RhtB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Aleshin VV,
                                                                                                                                                                                                                                                                                                                                                                                        MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                        181 MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 2; Page 13-14; 24pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY99597 standard; protein; 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99EP-00125406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98RU-00123511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zakataeva NP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (AJIN ) AJINOMOTO KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-414602/36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L-valine, L-leucine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB; AAA48442.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Escherichia coli.
                                                                                    Sequence, 205 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Livshits VA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EP1013765-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-JUN-2000
                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY99597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY99597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8X33333
                                                                                                                                                                                     à
                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                        ò
```

```
ó
                                                                                                                                                                                      120
                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                           180
                                                                                                                              09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the
                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antisense; prokaryotic essential gene; cell proliferation; drug design
present invention may also be used to synthesise L-threonine, L-valine and L-leucine at increased levels
                                                                                                                                                                                                                                                               GTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT
                                                                                                                                                                                                               61 GTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT
                                                                                                                                                                                                                                              121 NPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQ
                                                                                                                                                     1 MILEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWRGV
                                                                                                                              1 MTLEWWFAYLLTSILLTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWRGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zyskind JW;
Xu HH;
                                                                                                  Gaps
                                                                                                  0;
                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein encoded by Prokaryotic essential gene #17760.
                                                                    Score 1061; DB 3;
Pred. No. 1.2e-112;
                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Haselbeck R,
Yamamoto R,
                                                                 100.0%; Score Lvo.,
100.0%; Pred. No. 1.20
Five 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 25; SEQ ID NO 60157; 1766pp; English.
                                                                                                                                                                                                                                                                                                                            MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                         MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                                                                                                                                                                                                                                                              ABU32233 standard; protein; 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-MAR-2001; 2001US-00815242.
06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-034223P.
08-FEB-2002; 2002US-000728E1.
06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Klebsiella pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2003-029926/02
                                                                    Query Match
Best Local Similarity
Matches 205; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; ACA36103
                                             Sequence 205 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200277183-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                         ABU32233;
                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'nά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wang
Wall
                                                                                                                                                                                                                                                                                                                                                                                                                ឧដ្ឋ
                                                                                                                                                       g
                                                                                                                                                                                                                g
                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                         ò
```

```
antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation, (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway in the proliferation, or that inhibits cellular proliferation (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies or gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene product is overaxpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of arrains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids required for cellular proliferation to isolate candidate molecules for rational forging and scowery programs, or for screening homologous nucleic acids acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of the target prokaryoric essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    58 RGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFV 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59 VGLGTLFSRSVLAFEVLKWAGAAYLIWLGIQOWRAAGAIDLNTLAKAQTRGKLFQRAVFV 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTIVVDIIVMIGYATLAQRIALWIKG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MILEWWEAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTG---DSYCAGW 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Antisense; prokaryotic essential gene; cell proliferation; drug design.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .,
.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78.3%; Score 830.5; DB 6; Length 206; 81.2%; Pred. No. 2.6e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein encoded by Prokaryotic essential gene #13814.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PKOMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PKOMKALNKVFGSLFMLVGALLASARHA 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABU28287 standard; protein; 206 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001US-00815242.
2001US-00948993.
2001US-0342923P.
2002US-00072851.
2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 81.2%;
Matches 169; Conservative 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Enterobacter cloacae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 206 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-SEP-2001; 2
25-OCT-2001; 2
08-FEB-2002; 2
06-MAR-2002; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABU28287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THE STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid enoching a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibiting cellular proliferation or the activity of a gene in an operon required by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation; (7) identifying a compound that influences the activity of required for proliferation, or that has an activity against a biological pathway in which a proliferation or that the inhibits cellular proliferation; (8) identifying a gene required for cellular proliferation of an organism acrs; (9) manufacturing an antibiotic; (10) profiling an organism acrs; (9) manufacturing an antibiotic; (10) profiling an organism acrs; (9) manufacturing an antibiotic; (10) profiling a compound; a culture comprising strains in which the sere or underexpressed; (12) determining the extent or or a gene on which the test compound that inhibits proliferation of an organism. The antisense mucleic acids required for cellular proliferation in calls other than S: are useful for for proliferation in calls other than S: are useful or the target prokaryotic essential genes and ended by one of the target prokaryotic essential genes of the sequence are conded by one of the target prokaryotic essential genes of the sequence are conded by one of the target prokaryotic essential genes of the sequence of the prince of the prince of proliferation of the prince of specification, but was obtained to the condense of the present sequence are condensed for proliferation of the present sequence are organized.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           115 VEVNLTNEKSIVELAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59 ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          screening
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MTFEWWPAYLLTSIILSLSPGSGAINTWTTSINHGY-RGAAASIAGLQTG----LGIHIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MILEWWFAYLLTSIILTLSPGSGAINTMITSLNHGYPAGGVYCWASDRIGDSYCAGWR--
                                                             Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18; Indels 11; Gaps
                                                                                                                                                                                                           New antisense nucleic acids, useful for identifying proteins or s
for homologous nucleic acids required for cellular proliferation
isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 6; Length 206;
                                                                  Ohlsen Forsyth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 78.0%; Score 827.5; DB 6 Best Local Similarity 79.1%; Pred. No. 5.7e-86; Matches 167; Conservative 15; Mismatches 18
                                                                  Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             175 IKGPKOMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              176 IKGPKOMKALNKVFGSLFMLVGALLASARHA 206
                                                                                                                                                                                                                                                                                                            Claim 25; SEQ ID NO 56211; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tp.wipo.int/pub/published_pct_sequences
                                                                  Malone C,
                                                                                          Carr GJ,
                       (ELIT-) ELITRA PHARM INC.
                                                                  Zamudio C,
Trawick JD,
                                                                                                                                          WPI: 2003-029926/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 206 AA;
                                                                                                                                                                    N-PSDB; ACA32157
                                                                     Wang L,
Wall D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
ABU47858
ID ABU4
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ठ
```

ABU47858 standard; protein; 206

11;

21; Indels

13; Mismatches

166; Conservative

```
Matches
                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid comprising any one of the foll antisense sequences given in the specification where expression of the mucleic acid inhibites proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated or like fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene product or that has an activity against a bloogical pathway required for that has an activity against a bloogical pathway in which a proliferation, or that thibits cellular proliferation; (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation or the biological pathway in which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a computed sactivity; (11) a culture comprisal pathway in which the test compound that inhibits proliferation of an organism. The antisense nucleic acids required for which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense nucleic acids required for proliferation to isolate candidate molecules for rational for cellular proliferation in cells other than S. anrews, S. typhimurium, C. The target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the present sequence is encoded by one of the target prokaryotic the target prokaryotic the target prokaryotic that the present sequence is encoded by one of the ta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                             Antisense, prokaryotic essential gene, cell proliferation, drug design.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                 Protein encoded by Prokaryotic essential gene #33385.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 25; SEQ ID NO 75782; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001US-00948993.
2001US-0342923P.
2002US-00072851.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-MAR-2002; 2002WO-US009107
                                                                                                            19-JUN-2003 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2003-029926/02
                                                                                                                                                                                                                                                                                                                                      Salmomella typhi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; ACAS1728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 206 AA
                                                                                                                                                                                                                                                                                                                                                                                                              WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-SEP-2001; 25-OCT-2001; 208-FEB-2002; 206-MAR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03-OCT-2002
                                    ABU47858;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wang L,
Wall D,
```

Score 818.5; DB 6; Length 206; Pred. No. 6.1e-85;

77.18; 78.78;

Query Match Best Local Similarity

```
The invention relates to isolated polymucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polymucleotides are also used in diagnostics as expressed sequence tags for identifying expressed of the control of (II) or to treat disease states involving (II). (II) is useful in gene therapy techniques to restore normal ceful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food polypeptide in tissue, as molecular weight markers and as a food is useful for generating antibodies against it, detecting or quantitating a polypeptide and its binding partners are useful in medical imaging of stress expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polymucleotide sequences have applications in changing responsible for genetic disorders or other traits to assess blodiversity and to produce other types of data and products dependent on DNA and
                                                                          114
                                                                                                                                                                                    115 VEVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALM 174
                     1 MILEWWFAYLLISIILTLSPGSGAINTMITSLNHGYPAGGVYCWASDRIGDSYCAGWR-~
                                                                            59 ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human, chromosome mapping, gene mapping, gene therapy, forensic, food supplement, medical imaging, diagnostic, genetic disorder.
                                                                                                                                                                                                                                       175 IKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                               176 IKGPKQMKALNKAFGSLFMLVGALLASARHA 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   claim 20; SEQ ID NO 59567; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel human diagnostic protein #29199.
                                                                                                                                                                                                                                                                                                                                                                                Ä
                                                                                                                                                                                                                                                                                                                                                                                ABG29208 standard; protein; 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-MAR-2001; 2001WO-US008631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31-MAR-2000; 2000US-00540217.
23-AUG-2000; 2000US-00649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tang YT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-639362/73.
N-PSDB; AAS93395.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               biodiversity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-0CT-2001,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drmanac RT,
                                                                                                                                                                                                                                                                                                                                                                                                                      ABG29208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo
                                                                                                                                                                                                                                                                                                                                         RESULT 6
ABG29208
```

```
3-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABU50100;
                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 8
ABUS0100
    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                'n
                                                                                                                                                                                135
                                                                                                                                                                                                                                       IMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALMIKGPKQMKALNKIFGSLFMLV 180
                                                                                                                                                                                                    WAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVFLAALFPQF 120
                                                                                                                                                                                                                          IMPOOPOLMOYIVLGVITIVVDIIVMIGYATLAQRIALWIKGPKOMKALNKIFGSLFMLV 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             screening
represent novel human diagnostic
Note: The sequence data for this
                                                                                                                                                  3 SPGSGAINTWITSLNHGY-RGAVASIAGLQTGLAIHIVLVG-VGLGTLFSRSVIAFEVLK 60
                                                                                                                                   SPGSGAINTMITSLNHGYPAGGVYCWASDRTG---DSYCAGWRGVGTLFSRSVIAFEVLK 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter operably linked to the nucleic acid
 amino acid sequences. ABG00010-ABG30377 represent novel human diagnostic amino acid sequences of the invention. Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                        Antisense, prokaryotic essential gene, cell proliferation, drug design.
                                                                                                                                                                              WAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVFLAALFPQF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zyskind JW;
Xu HH;
                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New antisense nucleic acids, useful for identifying proteins or si
for homologous nucleic acids required for cellular proliferation isolate candidate molecules for rational drug discovery programs.
                                                                                                             Indels 5;
                                                                                          DB 4; Length 190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ă,ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ohlsen |
Forsyth |
                                                                                                                                                                                                                                                                                                                                                                                                                 Protein encoded by Prokaryotic essential gene #30466.
                                                                                       75.7%; Score 803.5; DB 4.
88.9%; Pred. No. 2.8e-83;
live 3; Mismatches 13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Haselbeck R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 25; SEQ ID NO 72863; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                 ABU44939 standard; protein; 205 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001US-00948993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-MAR-2001; 2001US-00815242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-FEB-2002; 2002US-00072851
06-MAR-2002; 2002US-0362699P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                                                                                                                                           19-JUN-2003 (first entry)
                                                                                       Query Match
Best Local Similarity 88.99
Matches 169; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BLIT-) ELITRA PHARM INC
                                                                                                                                                                                                                                                                                   GALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Salmonella paratyphi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2003-029926/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB; ACA48809
                                                                    Sequence 190 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-SEP-2001;
25-OCT-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-OCT-2002
                                                                                                                                    13
                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                    61
                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                       ABU44939;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang Wall
                                                                                                                                                                                                                                                                                                                           RESULT 7
                                                                                                                                                                                                                                                                                                                                       ABU44939
  888888
                                                                                                                                    ò
                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                              ò
```

```
encoding a polypeptide whose expression is inhibited by the antisense nucleic acid, (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the natisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide, (5) producing the polypeptide; (6) inhibiting cellular proliferation, or the activity of a gene in an operon required for proliferation, or that inhibits cellular proliferation; (8) identifying a gene required for retailular proliferation or the biological pathway in which a proliferation or that inhibits proliferation of an organism date; (9) manufacturing an antibiotic; (10) profiling a gene required for required for cellular proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene or product is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the compound that collection of strains; or (13) identifying the recent of an organism. The antisense nucleic acids required for cellular proliferation to isolate candidate molecules for rational correction of an organism. The present sequence is encoded by one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from NIPO at the present sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               115 VFVNLTNPKSIVFLAALFPOFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antisense; prokaryotic essential gene; cell proliferation; drug design
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59 ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein encoded by Prokaryotic essential gene #35627.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             74.6%; Score 791; DB 6; 76.8%; Pred. No. 8.4e-82; iive 14; Mismatches 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           175 IKGPKOMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             175 IKGPKOMKALNKAFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ą.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABUS0100 standard; protein; 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-MAR-2001; 2001US-00815242.
06-SEP-2001; 2001US-00948993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-MAR-2002; 2002WO-US009107.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 76.8
Matches 162; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 205 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yersinia pestis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19-JUN-2003
```

```
Local
                  AAG98975
                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                     The invention relates to an isolated mucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibite proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the mucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) an host cell containing the vector; (3) an isolated polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for the proliferation or that has an activity against a biological pathway required for proliferation, or that that inhibits cellular proliferation; (7) identifying a compound that inhibits cellular proliferation, (8) identifying a gene required for cellular proliferation or the biological pathway in which a proliferation or the biological pathway in which a proliferation or the biological pathway in which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound; a activity, (11) a culture comprising strains in which the est compound that inhibits proliferation of an organism or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense mucleic acids are useful for identifying proteins or screening for homologous mucleic acids required for proliferation in calls other than S. arreus, S. typhmurium, K. premunniae or P. aeruginosa. The present sequence is encoded by one of the target prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained for proliferation formed directly from MIPO at
                                                                                                                                                                                   New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   110 KLFKRAVFVNLTNPKSIVFLAALFPQFVLPQQPQVAQYLLIGSTSVIVDIIVMIGYATLA 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59 ------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRR 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MILEWWFAYLLTSIILTLSPGSGAINTWITSLNHGYPAGGVYCWASDRIGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLA
                                                                                            Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                          Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65.8%; Score 698.5; DB 6;
63.3%; Pred. No. 3.1e-71;
live 33; Mismatches 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIALWIKGPKOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRIARWIKSPQQMKLLNRIFGGLFMLIGALLATAR
                                                                                        Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                               Claim 25; SEQ ID NO 78024; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ftp.wipo.int/pub/published_pct_sequences
                                                                                          Malone C,
Carr GJ,
25-OCT-2001; 2001US-0342923P.
08-FEB-2002; 2002US-00072851.
06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 63.3%
Matches 136; Conservative
                                                            (ELIT-) ELITRA PHARM INC.
                                                                                          Zamudio C,
Trawick JD,
                                                                                                                                      WPI; 2003-029926/02
                                                                                                                                                        N-PSDB; ACA53970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 206 AA;
                                                                                          Wang L,
Wall D,
 ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
AAH84373 to AAH84499 represent Escherichia coli growth and proliferation related DNA sequences (I). AAH84500 to AAH84570 encode the E. coli growth and proliferation related proteins given in AAG99078 and AAG9830 to and proliferation related proteins given in AAG99078 and AAG98830 to aAG98999. (I) can be used as potential targets for the generation of new antimicrobial agents, and for identification of compounds which interact with the gene products of (I). In addition the expression of (I) and the purification of the proteins, the purified proteins can be used to generate reagents and screen small molecule libraries or other candidate compound libraries for compounds that can be further developed to yield novel antimicrobial compounds. In addition, nucleic acid probes complementary to (I) that are specific for particular species of microorganisms can be used to identify particular microorganism species in clinical specimens, therefore, providing a rapid and dependable method by which to identify the causative agents of a bacterial infection. Also, antibodies generated against proteins translated from mNNA transcribed from proliferation-required sequences can also be used to screen for specific microorganisms that produce such proteins in a species-specific manner. AAH8471 and AAH84670 represent sequencing primers used in the isolation of E. coli growth and proliferation related sequence, which are used in an example from the present invention
                                                                                                                                                                                                                                           E. coli growth and proliferation related protein sequence SEQ ID NO:445.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel nucleic acids that inhibit Escherichia coli proliferation, useful for screening for homologous genes and for designing expression vectors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 LAALFPQFINPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALMIKGPKQMKALNKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      68 VIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128 LAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQMKALNKI
                                                                                                                                                                                                                                                                                                                      Escherichia coli; growth; proliferation; microbial; antimicrobial; bacterial infection; microorganism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64.7%; Score 686; DB 4; Length 138; 99.3%; Pred. No. 4.9e-70; ive 1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 19; Page 502-503; 522pp; English
Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zyskind J;
AAG98975 standard; protein; 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-NOV-2000; 2000WO-US030950.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0164415P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 FGSLFMLVGALLASARHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity ....
Matches 137; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ELIT-) ELITRA PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ohlsen K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001-335933/35.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAH84646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 138 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200134810-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-NOV-1999;
                                                                                                                                                               26-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Forsyth RA,
                                                                               AAG98975;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
```

ö

RESULT 10 ABU14756

```
(first entry)
                                                                                                               Best Local Similarity 99.3
Matches 137; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2003-029926/02.
N-PSDB; ACA52910.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vibrio cholerae.
Sequence 138 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABU49040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang L,
Wall D,
                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ELIT-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
ABU49040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to an isolated mucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibites proliferation of a cell. Also included are:

(I) a vector comprising a promoter operably linked to the mucleic acid concluded are:

(I) a vector comprising a promoter operably linked to the mucleic acid concluded and isolated are:

(I) a not cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation; (7) identifying a gene in an operon required for proliferation; (7) identifying a compound that influences the activity of a gene in an operon required for proliferation; (7) identifying a compound that inhibits cellular proliferation; (8) identifying a gene required for clular proliferation of the proliferation or that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism (12) dentifying the target of a compound that inhibits the proliferation of an organism for homologous nucleic acids required for callular proliferation to solate candidate mucleic acids required for callular proliferation to solate candidate mucleic acids required for a sequence of the callular proliferation to solate candidate mucleic acids required for a sequence of the sequence of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    drug discovery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of the trarget prokaryotic essential genes. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at the printed specification, but was obtained ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                       Antisense; prokaryotic essential gene; cell proliferation; drug design.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zyskind JW;
Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Haselbeck R, Ohlsen KL,
Yamamoto R, Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                          Protein encoded by Prokaryotic essential gene #283.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 25; SEQ ID NO 42680; 1766pp; English.
                                                                                                                   ABU14756 standard; protein; 138 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-MAR-2001; 2001US-00815242.
06-SEP-2001; 2001US-0094893.
25-OCT-2001; 2001US-0342923P.
08-FEB-2002; 2002US-0362899.
06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-MAR-2002; 2002WO-US009107
                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zamudio C,
Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2003-029926/02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; ACA18626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  03-OCT-2002
                                                                                                                                                                                                ABU14756;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ijΩ
```

```
ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibits proliferation of a cell. Also included are: (1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide or its fragment whose expression is inhibited by the antisense autisense nucleic acid; (4) an antibody capable of specifically binding the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation; (7) identifying a compound that influences the activity of the gene product or that has an activity against a biological pathway required for proliferation, or that inhibits cellular proliferation; (8)
                                                                                                                                                                        61 LAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALMIKGPKQMKALNKI 120
                                                                          68 VIAFEVLKWAGAAYLIWIGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF 127
                                                                                                                                                    187
                                                                                                Antisense; prokaryotic essential gene; cell proliferation; drug design
                                                                                                                                                    128 LAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQMKALNKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zyskind JW;
Xu HH;
                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New antisense nucleic acids, useful for identifying proteins or so
for homologous nucleic acids required for cellular proliferation
isolate candidate molecules for rational drug discovery programs.
                                      ..
0
    Length 138;
Score 686; DB 6; Length 138
Pred. No. 4.9e-70;
1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ohlsen KL,
Forsyth RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein encoded by Prokaryotic essential gene #34567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Haselbeck R,
Yamamoto R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 25; SEQ ID NO 76964; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                 ABU49040 standard; protein; 205 AA.
                                                                                                                                                                                                                               188 FGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                               121 FGSLFMLVGALLASARHA 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Malone C,
Carr GJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-MAR-2001, 2001US-00815242.
06-SEP-2001, 2001US-0094893.
25-OCT-2001, 2001US-0042923P.
08-FEB-2002, 2002US-00072851.
06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-MAR-2002; 2002WO-US009107.
    64.78;
99.38;
```

ω

```
identifying a gene required for cellular proliferation or the biological pathway in which a proliferation-required gene or its gene product lies or a gene on which the test compound that inhibits proliferation of an organism acts, (9) manufacturing an antibiotic; (10) profilling a compound's activity; (11) a culture comprising strains in which the gene product is overexpressed or underexpressed; (12) determining the extent to which each of the strains is present in a culture or collection of strains; or (13) identifying the target of a compound that inhibits the proliferation of an organism. The antisense mucleic acids required for cellular proliferation to isolate candidate molecules for rational for gal scorery programs, or for screening homologous nucleic acids required for proliferation in cells other than S. aureus, S. typhimurium, K. pneumoniae or P. aeruginosa. The present sequence is encoded by one of the target prokaryotic essential genes. Note: The sequence date for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60 GIGALVAQSALAFTLIKWIGAAYLVWLGIQKWRDRAPITATTTSHELSQAALLRKAVLIN 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119 LTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGP 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHG--YPAGGVYCWASDRTGDSYCAGWR 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59 GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human, chromosome mapping; gene mapping; gene therapy, forensic; food supplement; medical imaging; diagnostic; genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                         43.3%; Score 459.5; DB 6; Length 205; 43.4%; Pred. No. 6.3e-44; Live 44; Mismatches 69; Indels 3;
                                                                                                                                                                                                                                                                                                                          in electronic format directly from WIPO at
ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             179 KOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180 NIMTRMNKLFGSMFMGCGMLLATAK 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel human diagnostic protein #25216.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABG25225 standard; protein; 245 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-MAR-2001; 2001WO-US008631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31-MAR-2000; 2000US-00540217.
23-AUG-2000; 2000US-00649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tang YT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 43.44
Matches 89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-639362/73
N-PSDB; AAS89412.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                     Sequence 205 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200175067-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABG25225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABG25225
      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
The invention relates to isolated polynuclectide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynuclectides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to rescore normal cativity of (II) are to treat disease states involving expressed polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polymuclectide sequences have applications in diagnostics, formsics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. AEG00010-AEG30377 represent novel human diagnostic amino acid sequences of the invention. Note: The sequence other this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Antisense; prokaryotic essential gene; cell proliferation; drug design
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 MYIRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTIVVDIIVMIGYATLAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        110 LFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zyskind JW;
New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3, Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ohlsen KL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein encoded by Prokaryotic essential gene #24417.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38.6%; Score 410; DB 4;
ilarity 94.3%; Pred. No. 3.6e-38;
Conservative 2; Mismatchen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Haselbeck R,
                                                                                                Claim 20; SEQ ID NO 55584; 103pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 170 RIALWIKGPKOMKALNKIFGSLFMLVGA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RIALWIKGPKOMKALNKIFGSLFMLHNA 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABU38890 standard; protein; 209 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zamudio C, Malone C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-MAR-2001; 2001US-00815242.
06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-0342923P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-MAR-2002; 2002WO-US009107.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-FEB-2002; 2002US-00072851.
06-MAR-2002; 2002US-0362699P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ELIT-) ELITRA PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pseudomonas aeruginosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
nes 83; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 245 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200277183-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABU38890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wang L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
ABU38890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
```

screening

Ħ,

Хu

Forsyth RA,

Yamamoto R,

```
The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the nucleic acid inhibite proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) an bost cell containing the vector; (3) an isolated polypeptide; (5) producing the polypeptide; (5) inhibiting cellular proliferation or the activity of a gene in an operon required for proliferation or that has an activity against a biological pathway required for proliferation, (7) identifying a compound that influences the activity of a gene in an operon required for proliferation or that has an activity against a biological pathway required for proliferation, (7) identifying a mactivity of a gene in an operon required for proliferation or that the subjection of the gene product or that has an activity against a biological pathway in which a proliferation required gene or ties gene proliferation of an oraganism acts; (9) manufacturing an antibiotic; (10) profiling a gene required for compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound's activity, (11) a culture comprising strains in which the test compound that inhibits proliferation of an organism. The antisense nucleic acids are useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation in cells other than S. aureus, S. typhimurium, S. proliferation in cells other than S. aureus, S. typhimurium, S. patent did not form part of the printed specification, but was obtained for proliferation in cells other present esquence is encoded by one of the target prokaryotic essential genes proliferation, the target prokaryotic essential genes of the sequence of the sequence of the form part of the printed specification, but was obtained for the form part of the printed specification.
                                                                                                                               New antisense nucleic acids, useful for identifying proteins or s
for homologous nucleic acids required for cellular proliferation
isolate candidate molecules for rational drug discovery programs.
                                                                                                                                                                                                                                                     Claim 25; SEQ ID NO 66814; 1766pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ftp.wipo.int/pub/published_pct_sequences
Carr GJ,
Trawick JD,
                                                                                     N-PSDB; ACA42760
Wall D,
```

Sequence 209 AA;

103 104 TQSRRHLFQ-----RAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVD 157 100 TDGERPLGRPLTLVLRGFLVNASNPRAVIFMLAVLPQFIDPHQPLLAQYLIMGGTMIVVD 159 66 44 MLVSTWFAFFLACWAISLSPGAGALASMSCGLQYGFARG-------YWNAL 1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR--------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLAS 44; IIVMIGYATLAQRIALWIKGPKOMKALNKIFGSLFMLVGALLASARHA 205 Length 209, 64; Indels 36.7%; Score 389; DB 6; 36.4%; Pred. No. 7.4e-36; cive 37; Mismatches 64 Query Match Best Local Similarity 36.4%; Matches 83; Conservative 29 158 ò ð 임 ò g à

ADA33616 standard; protein; 220 AA.

ADA33616

20-NOV-2003 (first entry)

ADA33616;

24; ; Score 368; DB 6; Length 220; Pred. No. 2e-33; 46; Mismatches 71; Indels Protein encoded by Prokaryotic essential gene #26941 168 AQRIALWIKGPKQMKALNKIFGSLFMLVGALLASARHA 205 182 ASKVLRLLRSPKQOKYLNRGFAVMFSCAALLLSTVHQA 219 ABU41414 standard; protein; 210 34.7%; Ouery Match
Best Local Similarity 35.34
Matches 77; Conservative (first entry) Sequence 220 AA; 19-JUN-2003 ABU41414; RESULT 15 d d ે g g ò ò

```
New Acinetobacter baumanii proteins and nucleic acids, useful as reagents for diagnosing a bacterial disease, as components of antibacterial vaccines, as targets for antibacterial drugs, or as biocontrol agents for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59 ------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRA-AGAIDLKSLASTQSR 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 ILIQIMIVAAGVGVLFATTPLAFQAVKWFGVAYLLYLAYLQWTAPVKDIBIQHEKKDKSV 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          122 SALLFNGFVVNISNPKAIVFLLAVLPQFLDLSKPQWIQYLIMAATMVTIDLIVMAGYTGL 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MILEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRIGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to isolated Acinetobacter baumannii nucleic acids. The A. baumannii nucleic acids and polypeptides are useful as reagents for diagnosing a bacterial disease, as components of antibacterial vaccines, as targets for antibacterial drugs, to detect the presence of A. baumannii and other Acinetobacter species in a sample, in screening compounds for the ability to interfere with the A. baumannii life cycle or to inhibit A. baumannii infection, and as biocontrol agents for plants. The present sequence represents the amino acid sequence of an A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13 MSLQVWFAYMLACWVISISPGAGAIASMSSGLNYGF------RHGYWNAIGLQIA 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     108 RHLFORAVFVNLTNPKSIVFLAALFPOFIMPQOPQLMQYIVLGVTIVVDIIVMIGYATL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                     Acinetobacter baumannii, bacterial disease; antibacterial; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example, SEQ ID NO 4903; 328pp; English.
                 Acinetobacter baumannii protein #777
                                                                                                                                                                                                                                                                                                                  (GENO-) GENOME THERAPEUTICS CORP.
                                                                                                                                                                                                                                     99US-00328352.
                                                                                                                                                                                                                                                                            98US-0088701P
                                                                                                                  Acinetobacter baumannii
                                                                              plant biocontrol agent
                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2003-576092/54.
N-PSDB; ADA29490.
                                                                                                                                                                                                                                                                                                                                                        Bush D;
                                                                                                                                                                                                                                                                              09-JUN-1998;
                                                                                                                                                         JS6562958-B1
                                                                                                                                                                                                                                     04-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                          Breton G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          plants.
```

ω •

Antisense; prokaryotic essential gene; cell proliferation; drug design. Pseudomonas syringae.
WO200277183-A2.
03-OCT-2002.
21-MAR-2002; 2002WO-US009107.
21-MAR-2001; 2001US-00915242.
06-SEP-2001; 2001US-00948993.
25-OCT-2001; 2001US-00948993.
06-PEP-2002; 2002US-00070851.
06-MAR-2002; 2002US-003626999.

(ELIT-) ELITRA PHARM INC.

Wang L, Zamudio C, Malone C, Haselbeck R, Ohlsen KL, Zyskind JW; Wall D, Trawick JD, Carr GJ, Yamamoto R, Forsyth RA, Xu HH;

WPI; 2003-029926/02. N-PSDB; ACA45284. New antisense nucleic acids, useful for identifying proteins or screening for homologous nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs.

Claim 25; SEQ ID NO 69338; 1766pp; English.

The invention relates to an isolated nucleic acid comprising any one of the 6213 antisense sequences given in the specification where expression of the mucleic acid inhibite proliferation of a cell. Also included are:

(1) a vector comprising a promoter operably linked to the nucleic acid encoding a polypeptide whose expression is inhibited by the antisense nucleic acid; (2) a host cell containing the vector; (3) an isolated polypeptide; (5) producing the polypeptide; (6) inhibiting cellular proliferation or that has an activity against a binibiting cellular proliferation or that has an activity against a biological pathway in which a proliferation, or that thibitis cellular proliferation; (7) identifying a compound that inhibitis product for proliferation, or that thibits cellular proliferation; or the pological pathway in which a proliferation or the biological pathway in which a proliferation or the biological pathway in which a proliferation or the biological or a gene on which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound; activity, (11) a culture comprising strains in which the test compound that inhibits proliferation of an organism acts; (9) manufacturing an antibiotic; (10) profiling a compound; activity, (11) a culture comprising strains in which the test compound that inhibits of a cristing the strains of a comprising strains in which the proliferation of an organism. The antisense nucleic acids required for cellular proliferation to isolate candidate molecules for rational drug discovery programs, or for screening homologous nucleic acids required for proliferation to isolate candidate molecules for rational drug discovery programs. The present sequence is encoded by one of the target prokaryotic essential genes Note: The sequence drug for this in electronic format directly from WHPO at the present sequence or produced by the present esquence or produced by the present esquence or produced by the present esquence or coll

Sequence 210 AA;

```
Query Match
Best Local Similarity 34.5%; Pred. No. 2.1e-33;
Matches 76; Conservative 40; Mismatches 69; Indels 35; Gaps 3;
Oy I WILEWWFAYLLTSIILTLSPGSGAINTWITTSLWHGYPAGGVYCWASDRIGDSYCAGWR-- 58
```

---GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAA--GAIDLKSL 101

1 MALETWLGFFAACWIISLSPGAGAIASMSCGLQYGFLRG-----

----- YWNAL 44

Db 45 GLQIALVAQIAIVAAGLGAVLAASEMAFTLIKWFGVAXLVYLGIKQWRASPTDLADESAV 104

OY 102 ASTQSRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTIVVDIIVM 161

Db 105 RPVGKPMTLVFRGFLVNISNPKALIFILAILPQFIEFTAPLFMQYVIIAATMVVDLIVM 164

OY 162 IGYATLAQRIAMIKERGKQMKALNKFRGSLFMLVGALAS 201

163 AGYTGLASKVLRALKTFRQQRRLNRTFASLFVGAAGFLAT 204

Search completed: March 24, 2004, 21:14:43 Job time : 63 secs

Н

Page

```
Sequence 2, Application US/09396357

Patent No. 6303348

GENERAL INFORMATION:
APPLICANT: LINSORMATION:
APPLICANT: ZAKATAEVA, NATALYA PAVLOVNA
APPLICANT: ALCOSHIN, VIADIMIR VENYAMIOVICH
APPLICANT: BLAREOVA, ALL VALENTINOVNA
APPLICANT: BELAREOVA, ALL VALENTINOVNA
APPLICANT: BICANTION: ESCHERICHIA COLI RESISTANCE TO LO-HOMOSERINE AND METHOD
TITLE OF INVENTION: FOR PRODUCING L-AMINO ACIDS
TITLE OF INVENTION NORDER: US/09/396,357
CURRENT PELING DATE: 1999-09-15
EARLIER RING DATE: 1999-09-15
SARLIER FILING DATE: 1998-10-13
NUMBER OF SEQ ID NOS: 2
SOFTWARE: PARENTIN VET: 2.1
SSOFTWARE: PARENTIN VET: 2.1
     4608, Ap
6411, Ap
6695, Ap
6695, Ap
10446, A
32455, Ap
12455, Ap
7320, Ap
8225, Ap
8225, Ap
6559, Ap
6659, Ap
6659, Ap
6659, Ap
                                                                                                                                                                                                                                                                                                                                                                           11845,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 GTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 GTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 NPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWRGV
                                                  Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 o;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
US-09-134-001C-4608

US-09-328-352-6471

US-09-328-352-6955

US-09-252-91A-18746

US-09-252-91A-18746

US-09-328-352-4784

US-09-328-352-4784

US-09-328-352-4784

US-09-328-352-4784

US-09-328-352-4784

US-09-328-352-6732

US-09-328-352-653

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 1061; DB 4; ilarity 100.0%; Pred. No. 1.1e-116; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 2
US-09-489-039A-8066
; Sequence 8066, Application US/09489039A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / TYPE: PRT
/ ORGANISM: Escherichia coli
US-09-396-357-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
ses 205; Conserv
     US-09-396-357-2
                                                                            124.5
123.5
123.5
123.5
116.5
116.5
113.5
113.5
102
104
104
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
107.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Si
Matches 205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Appli
Sequence 8066, Ap
Sequence 23018, Ap
Sequence 23018, Ap
Sequence 4887, Ap
Sequence 6808, Ap
Sequence 7159, Ap
Sequence 7159, Ap
Sequence 7131, Ap
Sequence 2711, Ap
Sequence 2711, Ap
Sequence 2711, Ap
Sequence 2711, Ap
Sequence 2717, Ap
Sequence 2717, Ap
Sequence 2747, Ap
Sequence 7537, Ap
Sequence 4854, Ap
Sequence 4854, Ap
Sequence 4854, Ap
Sequence 4854, Ap
Sequence 7537, Ap
Sequence 7537, Ap
Sequence 7537, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 31610, A
Sequence 9608, Ap
Sequence 5813, Ap
Sequence 8076, Ap
Sequence 25992, A
Sequence 25992, A
                                                                                                                                                              March 24, 2004, 21:13:32; Search time 22 Seconds (without alignments) 481.060 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                  US-09-847-392-2
1061
1 MTLEWWFAYLLTSIILTLSP.......KIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
                          GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-711-164-445
US-09-252-991A-23018
US-09-328-352-6808
US-09-328-352-6808
US-09-328-352-7159
US-09-328-352-7159
US-09-328-352-7159
US-09-252-991A-27131
US-09-252-991A-27175
US-09-252-991A-27175
US-09-252-991A-27175
US-09-252-991A-27177
US-09-252-991A-27177
US-09-252-991A-27177
US-09-252-991A-27177
US-09-252-991A-27177
US-09-252-991A-27177
US-09-252-991A-27177
US-09-543-681A-4854
US-09-543-681A-4854
US-09-543-681A-4854
US-09-543-681A-4854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-252-991A-31610
US-09-489-039A-9608
US-09-328-352-5813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-489-039A-8076
US-09-252-991A-25992
US-09-543-681A-4545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                389414 seqs, 51625971 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Issued Patents AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of
                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database
                                                                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Result
```

Š.

180

9

Patent No.

ò 임 ਨੇ 음 ò a  $\dot{\delta}$ g

```
Squence 4993, Application US/09328352
Pacent No. 656298
GENERAL INPORMATION:
APPLICANT: Gary L. Breton et al.
APPLICANT: Gary L. Breton et al.
TITLE OF INVENITON: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENITON: BAUMANII FOR DIAGNOSTICS AND THERAPEUTICS
FILE REPERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
LENGTH: 220
                                                                                                                                                                                             APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS;
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US (0)/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1999-02-18
PRIOR PELING DATE: 1999-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 23018
LENGTH: 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           113 GLQIGLALQIAIVAAGVGALLATSALAFSLIKWFGVAYLVYLAVRQWQAP-----PQALS 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59 ------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLAS 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           168 TDGERPLGRPLTLVLRGFLVNASNPKAVIFMLAVLPQPIDPHQPLLAQYLIMGGTMIVVD 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         104 TQSRRHLFQ-----RAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVD 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MTLEWWPAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158 IIVMIGYATLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 34.7%; Score 368; DB 4; Length 220; Best Local Similarity 35.3%; Pred. No. 3.8e-35; Matches 77; Conservative 46; Mismatches 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 36.4%; Pred. No. 1.8e-37;
Matches 83; Conservative 37; Mismatches 64;
                                                                                                                                     Sequence 23018, Application US/09252991A
Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: PRT
; ORGANISM: Acinetobacter baumannii
US-09-328-352-4903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-23018
121 FGSLFMLVGALLASARHA 138
                                                                                                                   US-09-252-991A-23018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-328-352-4903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 445, Application US/09711164

Batent No. 6589786

GAREAL INFORMATION:
APPLICANT: FOISYCH, R. Allyn
APPLICANT: Obleen, Kari
APPLICANT: Solskind, Judith
TITLE OF INVENTION: GENES ESSENTIAL FOR MICROBIAL PROLIFERATION AND ANTISENSE THERET
FILE REFERENCE: ELITRA.008A
CURRENT PAPLICATION NUMBER: US 60/16/415
PRIOR APPLICATION NUMBER: US 60/16/415
PRIOR APPLICATION NUMBER: US 60/16/415
ONDERSON FILING DATE: 1999-11-9
NUMBER OF SEQ ID NOS: 469
SOFTWARE: FASTSEQ for Windows Version 4.0
               PAPELICANT: GARY Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
FILLE OF INVENTION: PREPERBYCE: 2709,2004001.
CURRENT APPLICATION NUMBER: US/09/489,039A
CURRENT FILING DATE: 2000-01-27
PRIOR APPLICATION NUMBER: US 60/117,747
PRIOR PILING DATE: 1999-01-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68 VIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 LAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALMIKGPKQMKALNKI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58 RGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSLASTQSRRHLFQRAVFV 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            67 VGLGTLFSKSVLAFEVLKWAGAAYLIMLGIQOWRAAGAIDLNTLAKAQTRGKLFORAVFV 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118 NLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 MIEWWFAYLLTSIILSLSPGSGAINTWTTSINHGY-RGAAASIAGLQTGLAIHIVLVG- 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MTLEWWFAYLLTSILLTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTG---DSYCAGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LAALFPOFIMPQOPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQMKALNKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4; Length 214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
64.7%; Score 686; DB 4; Length 138;
Best Local Similarity 99.3%; Pred. No. 8.1e-73;
Matches 137; Conservative 1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 78.5%; Score 832.5; DB 4 Best Local Similarity 81.7%; Pred. No. 8.9e-90; Matches 170; Conservative 12; Mismatches 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               187 PKOMKALNKVFGSLFMLVGALLASARHA 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  188 FGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Klebsiella pneumoniae
US-09-489-039A-8066
                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 14342
SEQ ID NO 8066
LENGTH: 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-711-164-445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-711-164-445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
```

ઠે ద ਨੋ 엄 ò

g

ò

g ò

ò

```
APPLICANT: Gary L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUMANII FOR DIAGNOSTICS AND THERAPEUTICS
TITLE OF INVENTION: BAUMANII FOR DIAGNOSTICS AND THERAPEUTICS
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
SEQ ID NO 7159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 9795, Application US/09489039A

Batent No. 6510836

GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION:
FILE REFERENCE:
CURRENT APPLICATION NUMBER:
CURRENT FILING DATE:
CURRENT FILING DATE:
PRIOR APPLICATION NUMBER:
US 60/117,747

PRIOR FILING DATE:
NUMBER OF SEQ ID NOS: 14342
                                    ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80 -SLGCIAWGIVVACGLGALLMASDLAFNILKWMGAAYLAWLGLNMILKPRSQLADIQDNH 138
                                                                                                                                                                                                                                                                      61 GTLFSRSVIAFEVLKWAGAAYLIWLGIQQW-RAAGAIDLKSLASTQ---SRRHLFQRAVF 116
                                                                                                                                                                                                                                                                                                                    | : : | | : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | : : : : | | | : : : : : | | : : : : | | : : : : : | | | : : : : : | | : : : : : | | : : : : : | | : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | : : : | : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : : : | | : : : 
                                                                                                                                                                                                                                                                                                                                                                                                                          117 VNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIK 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100 SLASTQSRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDII 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50 GDSYCAGWR-----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQ-----QWRAAGAIDLK 99
                                                                                                                   11 LISIILIL-SPGSGAINTWITSINHGYPAG------GVYCWASDRIGDSYCAGWRGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 TLEWWFA-----YLLTSIILTLSPGSGAINTMTTSLNHG----YPAGGVYCWASDRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20.3%; Score 215.5; DB 4; Length 241; 28.5%; Pred. No. 3.7e-17; tive 45; Mismatches 77; Indels 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         160 VMIGYATL----AQRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                            13 ITIAFLTLSSPGPGVLFTVTNSINYGVRTALFGISGLIIGMFIIA---
                                    82; Indels
30.0%; Pred. No. 4e-18; ive 38; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177 GPKQMKALNKIFGSLFMLVGALL 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185 AGNNFSKLNKVSGCIFFLLAVLL 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-328-352-7159
. Sequence 7159, Application US/09328352
. Patent No. 656,998
. GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT CORGANISM: Acinetobacter baumannii US-09-328-352-7159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 28.55
Matches 65; Conservative
                                Conservative
Best Local Similarity
Matches 61; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
US-09-489-039A-9793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                            g
                                                                                                                                                                                                                                                                      \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            입
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4487, Application US/09543681A
Patent No. 6665709
GENERAL INFORMATION:
APPLICANT: GARY BRETON
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTBUS MIRABIL
TITLE OF INVENTION: DIAGNOSTICS AND THERAPBUTICS
FILE REPERENCE: 2709.1002-001
CURRENT FILING DATE: 2000-04-05
PRIOR PILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
SEQ ID NOS: 8344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:

APPLICANT: Gary L. Breton et al.

APPLICANT: Gary L. Breton et al.

APPLICANT: Gary L. Breton et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER

TITLE OF INVENTION: SAUMANNI POR DIAGNOSTICS AND THERAPEUTICS.

FILE REFERENCE: GTCS9-03PA

CURRENT APPLICATION NUMBER: US/09/328,352

CURRENT APPLICATION DATE: 1999-06-04

NUMBER OF SEQ ID NOS: 8252

LENGTH: 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62 LLIQIMIVAAGVGVLFATTPLAFQAVKWFGVAYLLYLAYLQWTAPVKDIBIQHEKKDKSV 121
                                                                                                                                                        108 RHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATL 167
                                                                                                                                                                                                 122 SALLFNGFVVNISNPKAIVFLLAVLPQFLDLSKPQWIQYLIMAATWYTIDLIVWAGYTGL 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLAST------ 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            105 -QSRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQL-MQYIVLGV----TTIVVD 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          149 VKAKNGLYIKALFLSLLNPKMIIFYVSFFIQFIDPKYENAGVPFFVLGVLEICSMLYLS 208
    ------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRA-AGAIDLKSLASTQSR 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 FAYLLTSIILTLSPGSGAINTMITSINHGYPAG-----GVYCWASDRIGDSYC--AGWRG 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46 WTYLLGVIFITLVPGPNSIFVLTSSAKHGVKGGYKAALGVF-----TGDALLIFLAFLG 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 21.5%; Score 228; DB 4; Length 250; Best Local Similarity 30.8%; Pred. No. 1.3e-18; Matches 69; Conservative 41; Mismatches 62; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VLIFGGVA----ITHKVKHNKRLASLSNSCIGAVFLLFGAKLA 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    158 IIVMIGYATLAQRIALWIKGPKQMKAL-NKIFGSLFMLVGALLA 200
                                                                                                                                                                                                                                                                                                                168 AORIALWIKGPKOMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                             4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΩB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 6808, Application US/09328352 Patent No. 6562958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , ORGANISM: Acinetobacter baumannii
US-09-328-352-6808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: PRT ORGANISM: Proteus mirabilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-543-681A-4487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-543-681A-4487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-328-352-6808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
    23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
```

ò

d à g

ò g à g 70

```
GENERAL INFORMATION:

APPLICANT: Marc J. Rubenfield et al.

APPLICANT: Marc J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS TITLE OF INVENTION: NUCLEIC ACID AND INAGNOSTICS AND THERAPEUTICS.

TITLE OF INVENTION: ACID SECUENCE: 107196.136

CURRENT PEPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR PILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 26644

LENGTH: 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59 GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQ-WRAAGAIDLKSLASTQSRRHLFQRAVFV 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118 NLTNPKSIVFLAALFPQFI-MPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIK 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66 RSVIAFEVLKWAGAAYLIWLGIQQWRAAG-AIDLKSLAST----QSRRHLFQRAVFVNLT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 NPKSIVFLAALFPQFIMPQQPQL-MQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKG-P 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      131 SLTNPKAILFYVSFFVQFIDVNAKTPGVAFFILALTLEVISFCYMSFLILSGSFVTRYVK 190
                                                                                                                                                                                                                                                                                                                                                                                   6 WFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAG-----GVYCWASDRTGDSYC--AGWR 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 YLTYLVGAVFIILVPGPNTFFVLKTGIAHGVKKGYLAAAGVF-----IGDAVLMFLAFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 AYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYC--WASDRTGDSYCAGWRGVGTLFS
                                                                                                                                                                                                                                                                                                                                           16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10;
    PNEUMONIAE FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                Length 219;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 222;
                                                                                                                                                                                                                                                                                                                                        90; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18.2%; Score 193; DB 4; Length 22:
28.8%; Pred. No. 1.5e-14;
Live 30; Mismatches 106; Indels
                                                                                                                                                                                                                                                                                           18.2%; Score 193; DB 4; 26.7%; Pred. No. 1.4e-14;
; TITLE OF INVENTION: PNEUMONIAE FOR DIAGNOSTI; FILE REFERENCE: 2709.2004001
; CURRENT APPLICATION NUMBER: US,09/489,039A; CURRENT FILING DATE: 2000-01-27; PRIOR APPLICATION NUMBER: US 60/117,747; PRIOR FILING DATE: 1999-01-29; NUMBER OF SEQ ID NOS: 14342; LENGTH: 219
                                                                                                                                                                                                                                                                                                                                           45; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   177 GPKOMKAL-NKIFGSLFMLVGALLAS 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179 KQMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-252-991A-26644
; Sequence 26644, Application US/09252991A
; Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                           ; ORGANISM: Klebsiella pneumoniae
US-09-489-039A-7731
                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 26.74
Matches 55; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 28.84
Matches 59, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-252-991A-26644
                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INPORMATION:
APPLICANT: Gary L. Breton et al.
APPLICANT: Gary L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUGANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DAIE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: Gary Breton et. al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO KLEBSIELLA
                                                                                                                                                                                                                                                                                                                                           56 IIAASLGLTTIFQIIPKLYDIIKILGALYLVWLGIKLIRSTSSPTLQQ--NVENGQLSLR 113
                                                                                                                                                                                                                                                                                                                59 -GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFV 117
                                                                                                                                                                                                                                                                                                                                                                                                        NLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                   128 NVLNPKMGVFYVSFLPQFIPAGHSPVSWTFLLVAIHVLIGTLWSLTLITATRYAAGILKK 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53 YCAGWRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQ 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RAVFVNLTNPKSIVFLAALFPQFIMPQQ--PQLMQYIVLGVTT----IVVDIIVMIGYAT 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 AYTLAATLITLTPGLDTALILRTATAEGGRKALHAALGI------DLGCFIWGALVA 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55
                                                                                                                                                                                                                        8 AYLLTSIILTLSPGSGAINTMTTSLNHG-----YPAGGVYCWASDRTGDSYCAGWR---- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAG-----GVY----CWASDRTGDS
                                                                                                                                                                                  19;
                                                                                                                                     Length 214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 208;
                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81; Indels
                                                                                                                                  18.9%; Score 200.5; DB 4; 29.1%; Pred. No. 1.8e-15; tive 32; Mismatches 95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ch 18.7%; Score 198; DB 4; Similarity 25.4%; Pred. No. 3.5e-15; 54; Conservative 52; Mismatches 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LAQRIALWIKGPKQMKALNKIFGSLFMLVGALL 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               174 ISQKLT---KSKKPQKSMSVMGGLIFMGLGVFL 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | :| ::: | | | :| | :| EAVVKWMDRTTGCLFLLFAAKLAMSR 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PKOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 7731, Application US/09489039A
Patent No. 6610836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
US-09-328-352-5111
; Sequence 5111, Application US/09328352
; Patent No. 6562958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT ORGANISM: Acinetobacter baumannii
                                          TYPE: PRT CRGANISM: Klebsiella pneumoniae US-09-489-039A-9793
                                                                                                                                Query Match
Best Local Similarity 29.1%
Matches 60; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 54; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-489-039A-7731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-328-352-5111
SEQ ID NO 9793
LENGTH: 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 5111
                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   167
                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                      \dot{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           쉽
```

음

```
Sequence 7537, Application US/09328352

Patent No. 6562958

GENERAL INFORMATION

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER

TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS

FILE REPERENCE: GTC99-03PA

CURRENT APPLICATION NUMBER: US/09/328,352

CURRENT APPLICATION DATE: 1999-06-04

NUMBER OF SEQ ID NOS: 8252

SEQ ID NO 7537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
..
                                                                                                                                                     61 ASGLALVLHTSAWLFLAIKVLGAAYLLWLAVQLWRT----DAQPLVNEASPARPSLWRLG 116
                                                                                                                                                                                                                                         58 -RGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRR----HLF 111
                                                                                                                                                                                                        112 QRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRI 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 GTLFSRSVIAFEVLKWAGAAYLIWLG-----IQQWR----AAGAIDLKSLASTQSRR 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87 ASLLKAFPWVFIVLKLVGALÝLSYLGFKLLGGSIQRWKLRNQPQAEMADLPAL----DKV 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109 HLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQP-QLMQYIVLGVTTIVVDIIVMIGYATL 167
                                        9 YLLTSIILTLSPGSGAINTMTTSLNHGYPAG-----GVYCWASDRTGD----SYCAGWRGV 60
     6 WFAYLLTSIILTLSPGSGAINTMTTSLNHGYP----AGGVYCWASDRTGDSYCAGW---- 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78; Indels
                                                                                                                                                                                                                                                                                                           172 ALWIKGPKQMKALNKIFGSLFMLVG-ALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                            177 GRILAĞQRARRIFNRGCAALLGSAĞLGLLLSRRPA 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16.0%; Score 170; DB 4; 28.0%; Pred. No. 8.3e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        168 AQRIALWIKGPKQMKALNKIFGSLFMLVGAL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     197 TALIFSGIKLSTFFKONHKIAASGIFLVGIL 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 28.0%; Pred. No. 8.3e
Matches 59; Conservative 36; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   completed: March 24, 2004, 21:17:17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ) ORGANISM: Acinetobacter baumannii
US-09-328-352-7537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Search completed: Nob time : 23 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-328-352-7537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                        G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                             g
                                                                                                   8
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:

APPLICANT: Marc J. Rubenfield et al.

APPLICANT: Marc J. Rubenfield et al.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: ABRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS

FILE REFERENCE: 107196.136
CURRENT PAPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR PILING DATE: 1999-02-18
PRIOR PILING DATE: 1999-02-18
PRIOR FILING DATE: 1999-07-7
NUMBER OF SEQ ID NOS: 33142
LENGTH: 211
                                                                                                                                        Sequence 27175, Application US/09252991A
Patent No. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57 WRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSLASTQSR-----RHL 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82 ALGVASILKAEPMLFIGLKYLGAAYLFYLGVGMLRGAWR-KLRNPEATAAQAEKVDVHQP 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111 FORAVEVNLTNPKSIVFLAALFPOFIMP--QOPQLMQYIVLGVTTIVVDIIVMIGYATLA 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 EWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAG-----GVYCWASDRTGDS--YCAG 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
16.9%; Score 179.5; DB 4;
Best Local Similarity 27.9%; Pred. No. 6.2e-13;
Matches 60; Conservative 43; Mismatches 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
16.5%; Score 175.5; DB 4;
Best Local Similarity 26.0%; Pred. No. 1.6e-12;
Matches 56; Conservative 34; Mismatches 98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    169 ORIALWIKGPKOMKA-LNKIFGSLFMLVGALLASA 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200 VRLAAWFRRRQRLAAGATSGVGALFVGFGVKLATA 234
                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR PILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR APPLICATION NUMBER: US 60/094,190
NUMBER OF SEQ ID NOS: 33142
196 RAQRLQQWGFGGLLIGFGVRLALLR 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 20747, Application US/09252991A
Patent No. 6551795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-27175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas aeruginosa
                                                                                                                             -09-252-991A-27175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-252-991A-20747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-252-991A-20747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
```

ò d ò a 임 ò

à

```
GTLFSRSVIAFBVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Escherichia coli
US-09-927-395-2
2290.5
1180.5
150.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
1180.5
118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88889
89999
77....
898
857
857
857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2, Appli
Sequence 20157, A
Sequence 50157, A
Sequence 75782, A
Sequence 72863, A
Sequence 42680, A
Sequence 445, App
Sequence 7684, A
Sequence 66814, A
Sequence 66814, A
Sequence 67883, A
Sequence 57883, A
Sequence 67883, A
                                                                                                                                                                    March 24, 2004, 21:16:17; Search time 41 Seconds (without alignments) 1294.777 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                              US-09-847-392-2
1061
1 MTLEWWFAYLLTSIILTLSP.......KIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rublished Applications AA: "

( cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*

( cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

( cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

( cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

( cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

( cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

( cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

( cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*

( cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                         GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-927-395-2

US-10-847-392-2

US-10-282-122A-60157

US-10-282-122A-75782

US-10-282-122A-75782

US-10-282-122A-75863

US-10-282-122A-76863

US-10-282-122A-76964

US-10-282-122A-66914

US-10-282-122A-669183

US-10-282-122A-67983

US-10-282-122A-67983

US-10-282-122A-67983

US-10-282-122A-67983

US-10-282-122A-67983

US-10-282-122A-67983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1049977 segs, 258955339 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Published_Applications_AA:*
                                                                                                                             - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                          OM protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                            Run on:
```

```
Sequence 6, Applisacione 6, Applisacione 6, Applisacione 11297, Applisacione 11297, Applisacione 11297, Applisacione 11297, Applisacione 11297, Applisacione 11297, Applisacione 11298, Applisacione 11298, Applisacione 67027, Ap
2 US-10-282-122A-47826

4 US-10-374-903A-6

US-09-738-626-6418

4 US-10-156-761-1796

4 US-10-156-761-1796

4 US-10-156-761-1796

4 US-09-738-626-6710

US-09-738-626-761

US-09-738-626-710

US-09-738-626-710

US-09-738-626-710

US-09-738-628-710

US-10-282-122A-7384-738-73

US-10-282-122A-738-73

US-10-282-122A-738-73

US-10-282-122A-6027-73

US-10-282-122A-6027-73

US-10-282-122A-6325-73

US-10-282-122A-6325-73

US-10-282-122A-6325-73

US-10-425-114-67027-73

US-10-425-114-67037-73

US-10-166-142-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-282-122A-56917
US-10-282-122A-61182
US-10-282-122A-49913
US-10-282-122A-499320
```

## ALIGNMENTS

GENERAL INFORMATION:

GAPLICANT: LIVSHITS, VITALY ARRADIEVICH
APPLICANT: LIVSHITS, VITALY ARRADIEVICH
APPLICANT: ALCHITS, NATALY PANLOUNA
APPLICANT: ALCOSHIN, VILADIMIN VENYAMIOVICH
APPLICANT: BELAREOVA, ALL VALENTINONA
APPLICANT: BELAREOVA, ALL VALENTINONA
APPLICANT: TITLE OF INVENTION: DAY
TITLE OF INVENTION: POR PRODUCING L-AMINO ACIDS
TITLE OF INVENTION: FOR PRODUCING L-AMINO ACIDS
TITLE OF INVENTION: FOR PRODUCING L-AMINO ACIDS
TITLE OF INVENTION WIMBER: US/09/927,395
CURRENT APPLICATION NUMBER: 09/396,357
FRIOR FILING DATE: 1999-09-15
FRIOR FILING DATE: 1999-10-13
FRIOR FILING DATE: 1999-10-13
FRIOR FILING DATE: 1999-10-13
FRIOR PRICATION OF SEQ ID NOS: 2
SOFTWARE: PATENTIN OF SEC ID NOS: 3
SOFTWARE: PATENT OF SEC ID NOS: 3
SOFTWARE: PATENTIN OF SEC ID NOS: 3
SOFTWARE: ó 9 1 MILEWWFAYLLTSIILTLSPGSGAINTWITSLNHGYPAGGVYCWASDRIGDSYCAGWRGV 1 MTLEWWFAYLLTSIILTLSPGSGAINTWTTSLNHGYPAGGVYCWASDRTGDSYCAGWRGV Gaps 0 ch 100.0%; Score 1061; DB 9; Length 205; al Similarity 100.0%; Pred. No. 6.2e-110; 205; Conservative 0; Mismatches 0; Indels 0. ; Sequence 2, Application US/09927395; Patent No. US20020058314A1; GENERAL INFORMATION:

120

~

```
US-10-282-122A-60157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -10-282-122A-56211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
GTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT 120
                                                                                                 121 NPKSIVELAALFPQFIMPQQPQLMQYIVLGVTIVVDIIVMIGYATLAQRIALWIKGPKQ 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 NPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQ 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 NPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKO 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 GTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MILEWWFAYLISILILSPGSGAINTMITSLNHGYPAGGVYCWASDRIGDSYCAGWRGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MILEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRIGDSYCAGWRGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: LAVSHAIS, VITALI ARALULEVILA
APPLICANT: ZAKATABVA, NATALYA BAVLOVNA
APPLICANT: ZAKATABVA, NATALYA BAVLOVNA
APPLICANT: ALCOSHIN, VLADIMIR VENYAMOVICH
APPLICANT: BELAREOVA, ALL VALENTINOVNA
APPLICANT: TOKHYAKOVA, IRINA LVOVNA
TITLE OF INVENTION: DNA CODING FOR PROTEIN WHICH CON:
TITLE OF INVENTION: ESCHERICHIA COLI RESISTANCE TO
TITLE OF INVENTION: ESCHERICHIA COLI RESISTANCE TO
TITLE OF INVENTION: ESCHERICHIA COLI RESISTANCE
TITLE OF INVENTION: UNMBER: US/09/847,392
CURRENT FILING DATE: 1999-09-15
PRIOR PAPLICATION NUMBER: RU98118425
PRIOR PAPLICATION NUMBER: RU98118425
PRIOR PAPLICATION NUMBER: RU98118425
PRIOR PAPLICATION NUMBER: RU98118425
PRIOR PELING DATE: 1999-10-13
NUMBER OF SEQ ID NOS: 2.1
SEQ ID NO 2.
SECTWARE: PATENTIN VET: 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 1061; 100.0%; Pred. No. 6.2 iive 0; Mismatches
                                                                                                                                                         181 MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                        181 MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/09847392
Patent No. US2002010267041
GENERAL INFORMATION:
APPLICANT: LIVSHITS, VITALY ARKADIEVICH
APPLICANT: ZAKATAEVA, NATALYA PAVLOVNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 60157, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 100.0%;
Matches 205; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT (CONGANISM: Escherichia coli US-09-847-392-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wall, Daniel
Trawick, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
US-10-282-122A-60157
                                                                                                                                                                                                                                                                                                               JS-09-847-392-2
                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                    임
                                                                                                                                                         ò
                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
| APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | APPLICANT: Garage | Garage | APPLICANT: Garage | Gar
```

```
115 VEVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW 174
                                             CURRENT APPLICATION WIMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR PILING DATE: 2000-03-21
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR PILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-06
PRIOR PILING DATE: 2000-05-06
PRIOR PILING DATE: 2000-05-09
PRIOR PILING DATE: 2000-05-09
PRIOR PILING DATE: 2000-05-09
PRIOR PILING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PILING DATE: 2000-11-22
PRIOR PILING DATE: 2000-11-22
PRIOR PILING DATE: 2000-11-22
PRIOR PILING DATE: 2000-11-22
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MTFEWWFAYLLTSTILSLSPGSGAINTWTTSINHGY-RGAAASIAGLQTG----LGIHIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59 ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56 LVGVGLGTLFSRSLIAFEILKWAGAAYLIWLGIQQWRAAGAIDLHTLAQTQSRGRLFKRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: Identification of Essential Genes in Microorganisms FILE REPERENCE: ELITRA.034A
Identification of Essential Genes in Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77.1%; Score 818.5; DB 12; Length 78.7%; Pred. No. 7e-83; tive 13; Mismatches 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    175 IKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           176 İKGPKOMKALNKAFGSLFMLVGALLASARHA 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 72863, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Trawick, John
Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Salmonella typhi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 78.7
Matches 166; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -10-282-122A-72863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-282-122A-75782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59 ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           56 LVGIGLGTLFSRSVLAFFEVLKWAGAAYLIWLGIQQWRAAGSINLNTLALTQNRGHLFKRA 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   115 VEVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             116 VFVNLTNPKSIVFLAALFPQFIVPHQPQVMQYVVLGATTIIVDIIVMIGYATLAQRIAAM 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MTFEWWFAYLLTSIILSLSPGSGAINTWTTSINHGY-RGAAASIAGLOTG----LGIHIV 55
                             APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: 105/10/282,122A
CURRENT PILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MILEWWFAYLLTSILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      - See File Wrapper or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match

78.0%; Score 827.5; DB 12; Length 206;
Best Local Similarity 79.1%; Pred. No. 7e-84;
Matches 167; Conservative 15; Mismatches 18; Indels 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      176 IKGPKQMKALNKVFGSLFMLVGALLASARHA 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Remaining Prior Application data removed NUMBER OF SEQ ID NOS: 78614
SOFTWARE: Patentin version 3.1
SOFTWARE: 206
LENGTH: 206
                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR FLILING DATE: 2000-03-21
PRIOR FILING DATE: 2000-03-21
PRIOR FILING DATE: 2000-05-25
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-09-06
PRIOR PELING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR PILING DATE: 2000-10-23
PRIOR APPLICATION NUMBER: 60/24,578
PRIOR APPLICATION NUMBER: 60/25,625
PRIOR APPLICATION NUMBER: 60/25,625
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-12-22
PRIOR APPLICATION NUMBER: 60/267,636
PRIOR PILING DATE: 2000-12-22
PRIOR PILING DATE: 2000-12-22
PRIOR PILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           equence 75782, Application US/10282122A ublication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: 60/269,308
PRIOR FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT; ORGANISM: Enterobacter cloacae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Trawick, John
Carr, Grant
Yamamoto, Robe
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Danie]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -10-282-122A-75782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
```

```
59 ------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRR 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50 LAVHIVLVGVGLGALVSQSLLAFEILKWLGAAYLIWLGIQOWRAAGSLDLHALANSMPRR 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109 HLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLA 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110 KLFKRAVFVNLTNPKSIVFLAALFPQFVLPQQPQVAQYLLLGSTSVIVDIIVMIGYATLA 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MTLDWWLTYLLTTLILSLSPGSGAINTMSTAISHG--TRGVV-----ASIGGLQLG 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                           CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/206,848
PRIOR PELING DATE: 2000-05-23
PRIOR PELING DATE: 2000-05-23
PRIOR PAPLICATION NUMBER: 60/207,727
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-10-23
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2000-11-27
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-06
PRIOR APPLICATION NUMBER: 60/269,308
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PILING DATE: 2001-02-06
PRIOR PIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Xu, H.
TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034A
    OF INVENTION: Identification of Essential Genes in Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 65.8%; Score 698.5; DB 12; Length 206; Best Local Similarity 63.3%; Pred. No. 1.7e-69; Matches 136; Conservative 33; Mismatches 23; Indels 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    169 ORIALWIKGPKOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 42680, Application US/10282122A
Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Yamamoto, Robert
APPLICANT: Foreyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -10-282-122A-42680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-282-122A-78024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59 ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSLASTQSRRHLFQRA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       115 VFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 12; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       - See File Wrapper or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                74.6%; Score 791; DB 12; Length 205; 76.8%; Pred. No. 8.1e-80; ive 14; Mismatches 23; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         175 İKGPKOMKALNKAFGSLFMLVGALLASARHA 205
                     CURRENT FILING DATE: 2003-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
PRIOR FILING DATE: 2000-03-21
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-09-09
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-10-29
PRIOR FILING DATE: 2000-12-20
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
PRIOR FILING DATE: 2001-02-16
CURRENT APPLICATION NUMBER: US/10/282,122A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 78024, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: (169); .(169); OTHER INFORMATION: X=any amino acid US-10-282-122A-72863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Salmonella paratyphi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Zamudio, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Obleen, Kari
APPLICANT: Obleen, Kari
APPLICANT: Zyskind, Undith
APPLICANT: Tawick, John
APPLICANT: Tarick, John
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 76.88
Matches 162; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: MISC_FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
```

```
APPLICANT: Onlsen, Kari, Kari,
APPLICANT: Onlsen, Kari,
APPLICANT: Onlsen, Kari,
APPLICANT: Zyskind, Judith
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Vanamoto, Robert
APPLICANT: Kanamoto, Robert
APPLICANT: Korstch, R.
APPLICANT: X., H.
APPLICANT: Korstch, R.
APPLICANT: MARREN: US/10/282,122A
CURRENT FILING DATE: 2000-03-21
PRIOR PELING DATE: 2000-03-21
PRIOR PELING DATE: 2000-05-21
PRIOR PELING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-66
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-05-67
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-10-24
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PRIOR PELING DATE: 2000-10-26
PR
                                                                                                                                                                                                                                                                                                                      61 LAALFPOFIMPOOPOLMOYIVLGVTTIVVDIIVMIGYATLAQRIALMIKGFKOMKALNKI 120
                                                                                                                                                                                                                                                                    128 LAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQMKALNKI 187
                                                                                                                                                               1 MIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHIFQRAVFVNLTNPKSIVF 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MILEWWFAYLLISIILTLSPGSGAINTMITSLNHG--YPAGGVYCWASDRIGDSYCAGWR 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  43.3%; Score 459.5; DB 12; Length 205; 43.4%; Pred. No. 7.7e-43; tive 44; Mismatches 69; Indels 3;
                                                                                                                 68 VIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVF
Pred. No. 2.5e-68;
1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-282-122A-76964

Sequence 76964, Application US/10282122A

Publication No. US20040029129A1

GENERAL INPORMATION:
APPLICANT: Wang, Liangsu
APPLICANT: Andlone, Carlos

APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                           188 FGSLFMLVGALLASARHA 205
99.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 43.43
Matches 89; Conservative
Best Local Similarity 99.3
Matches 137; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Vibrio cholerae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-282-122A-76964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OS-1028/J-14-14-15

Sequence 445, Application US/10287274

Publication No. US20030181408A1

GENERAL INFORMATION

APPLICANT: FORSYCH, R. Allyn

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

APPLICANT: Objeen, Kari

CURRENT FILING DATE: 2002-10-31

PRIOR APPLICATION NUMBER: US 60/164415

PRIOR APPLICATION NUMBER: US 09/711164

PRIOR APPLICATION NUMBER: US 09/711164

PRIOR PILING DATE: 2000-11-09

NUMBER OF SEQ ID NOS: 469

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 445

LENGTH: 138

LENGTH: 138

US-10-287-274-445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGFKQMKALNKI 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68 VIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     128 JAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQMKALNKI 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF 60
                                                      PRIOR APPLICATION NUMBER: 60/191,078
PRIOR PILING DATE: 2003-02.20
PRIOR PLING DATE: 2000-03-21
PRIOR PILING DATE: 2000-05-21
PRIOR PILING DATE: 2000-05-25
PRIOR PLING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-09
PRIOR PILING DATE: 2000-09-09
PRIOR PILING DATE: 2000-10-23
PRIOR PILING DATE: 2000-10-23
PRIOR PAPLICATION NUMBER: 60/253,625
PRIOR PILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
PRIOR PILING DATE: 2001-02-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 14; Length 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 686; DB 12;
Pred. No. 2.5e-68;
1; Mismatches 0;
CURRENT APPLICATION NUMBER: US/10/282,122A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64.7%; Score 686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        188 FGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 FGSLFMLVGALLASARHA 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64.7%;
99.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 99.3
Matches 137; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-282-122A-42680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-287-274-445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
```

ø

8 g ò

à g

```
45 GLQIGLALQIAIVAAGVGALLATSALAFSLIKWFGVAYLVYLAVRQWQAP-----PQALS 99
                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Xu, H.

TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
TITLE REFERENCE: BLITRA.032.

TITLE REFERENCE: BLITRA.032.

CURRENT APPLICATION NUMBER: US/10/282,122A

CURRENT FILING DATE: 2003-02-20

PRIOR PELICATION NUMBER: 60/191,078

PRIOR FILING DATE: 2000-03-21

PRIOR PILING DATE: 2000-05-23

PRIOR PILING DATE: 2000-05-23

PRIOR PILING DATE: 2000-05-23

PRIOR PILING DATE: 2000-05-23

PRIOR PILING DATE: 2000-05-05

PRIOR PILING DATE: 2000-05-05

PRIOR PILING DATE: 2000-05-05

PRIOR PILING DATE: 2000-05-05

PRIOR PILING DATE: 2000-10-23

PRIOR PILING DATE: 2000-11-27

PRIOR PILING DATE: 2000-11-27

PRIOR PILING DATE: 2000-10-23

PRIOR PILING DATE: 2000-10-23

PRIOR PILING DATE: 2000-10-23

PRIOR PILING DATE: 2000-10-23

PRIOR PILING DATE: 2000-10-23

PRIOR PILING DATE: 2000-10-23

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-29

PRIOR PILING DATE: 2000-10-20-9

PRIOR P
                                                                                                                                                                                                                                               119 LTNPKSIVFLAALFPOFIMPQOPQLMQYIVLGVTIIVVDIIVMIGYATLAQRIALWIKGP 178
                                                                                                                     59 -------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLAS 103
                                                             59 GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSLASTQSRRHLFQRAVFVN 118
                                                                                                                                                                                                                                                                                                                                                120 LTNPKSIVFLVALFPQFIDFTRDHWPQFLVLGITTVTIDAIVMFGYTALAAQLGRXIRSP 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
36.7%; Score 389; DB 12; Length 209;
Best Local Similarity 36.4%; Pred. No. 5.7e-35;
Matches 83; Conservative 37; Mismatches 64; Indels 44; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                           179 KOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180 NIMTRMNKLFGSMFMGCGMLLATAK 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 66814, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Pseudomonas aeruginosa
US-10-282-122A-66814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Wang, Liangsu
APPLICANT: Mang, Carlos
APPLICANT: Malone, Carlos
APPLICANT: Malone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Judith
APPLICANT: Wall, Daniel
APPLICANT: Tawick, John
APPLICANT: Tawick, John
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-282-122A-66814
```

g ò

ò

_	Qy 104	-1	57
1	Db 100.	TDGERPLGRPLTLVLRGFLVNASNPKAVIFMLAVLPQFIDPHQPLLAQYLIMGGTMIVVD 15	59
~	Qy 158	IIVMIGYATLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASARHA 205	
-	Db 160		
<b>M</b> D	ULT 12 10-282 equence	:-122A-69338 :- 69338. Application US/10282122A	
	Publication No. US2	004002	
	APPLICANT:	Wang, Liangsu	
	, APPLICANT:	Zamudio, Carlos Malone Chemyl	
	APPLICANT:	Haselbeck, Robert	
	, APPLICANT:	Ohlben, Kari Zwebind Indith	
	APPLICANT	Wall, Daniel	
	APPLICANT:	Trawick, John Carr, Grant	
	, APPLICANT:	Yamamoto, Robert	
	, APPLICANT:	Forsyth, R. Xu. H.	
	TITLE OF I	TITLE OF INVENTION: Identification of Essential Genes in Microorganisms	
	CURRENT AP	FERENCE: ELIKA.034A APPLICATION NUMBER: US/10/282,122A	
	CURRENT FI	0	
	; PRIOR APPL.	R APPLICATION NUMBER: 60/191,0/8 R FILING DATE: 2000-03-21	
	, PRIOR APPL	ICATION NUMBER: 60/206,848	
	PRIOR FILLI	NG DATE: 2000-05-23 CCATION NUMBER: 60/207:727	
	PRIOR FILL		
	; PRIOR APPL	ICATION NUMBER: 60/230,335 NG DATE: 2000-09-06	
	, PRIOR APPL	ICATION NUMBER: 60/230,347	
	PRIOR FILLI	c	
	FRIOR FILL	0 7	
	, PRIOR APPL	ICATION NUMBER: 60/253,625	
	PRIOR FILL	r	
	PRIOR FILL	2000-12-22	
	, PRIOR APPL	NUMBER: 60	
	, PRIOR FILL		
	PRIOR AFFIL	NUMBER: 60/269,30 2001-02-16	
	ning		
	SOFTWARE:	SEQ ID NOS: 78614 PatentIn version 3.1	
	SEQ ID NO 6	59338 110	
	, ξ		
-	H	Pseudomonas syringae 1-69338	
	Query Match	34.6%; SCOIRE 367.5; DB	
	Matches 7	. Conservative 40; Mismatche	w.
_	Oy 1	GVYCWASDRTGDSYCAGWR 5	œ
-	Db 1	MALETWLGFFAACWIISLSPGAGAIASMSCGLQYGFLRGYWNAL 44	4
_	95	GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSL 10	101
		PTDLADESAV	104

ð g

8 g

```
APPLICANT: Xu, H.

ITTLE OF INVENTION: Identification of Essential Genes in Microorganisms
FILE REFERENCE: ELITRA.034
CURRENT APPLICATION WUMBER: US/10/282,122A
CURRENT FILING DATE: 2000-02-20
PRIOR PILING DATE: 2000-03-21
PRIOR PELICATION NUMBER: 60/191,078
PRIOR PELICATION NUMBER: 60/207,727
PRIOR PELING DATE: 2000-05-23
PRIOR PELING DATE: 2000-05-36
PRIOR PELING DATE: 2000-05-66
PRIOR PELING DATE: 2000-05-66
PRIOR PELING DATE: 2000-05-66
PRIOR PELING DATE: 2000-09-09
PRIOR PELING DATE: 2000-09-09
PRIOR PELING DATE: 2000-10-23
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2000-11-27
PRIOR PELING DATE: 2001-12-22
PRIOR PELING DATE: 2001-02-09
PRIOR PELING DATE: 2001-02-09
PRIOR PELING DATE: 2001-02-09
PRIOR PELING DATE: 2001-02-09
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELING DATE: 2001-02-16
PRIOR PELIN
58 ------RGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGA---IDLKSLASTQ 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50 ILFQFLIVAVGLGAVLATSELAFTLVKYAGVVYLIYLGMRQIRTDAAPVTVDAGD-PHRA 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106 SRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYA 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109 SIRELVGRGFLINTMNPKGTVFLLAVVPQFVDPAQPLTQQYLALAGTLAFTDLVAMDVYT 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MILEWWFAYLLTSIILTLSPGSGAINTWITSLNHGYPAGGVYCWASDRIGDSYCAGW---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27;
                                                                                                                                                                 157 DIIVMIGYATLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29.5%; Score 312.5; DB 12; Length 33.5%; Pred. No. 2e-26; ive 39; Mismatches 79; Indels
                                                                                                                                                                                                                                                                                                                                                                  Sequence 51102, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT CRGANISM: Bordetella pertussis US-10-282-122A-51102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wall, Daniel
Trawick, John
Carr, Grant
Yamamoto, Robert
Forsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 33.55
Matches 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CANT: Wang, Liangsu
CANT: Zamudio, Carlos
CANT: Malone, Cheryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                           셤
                                                                                                                  ઠે
                               102 ASTQSRRHLFQRAVEVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIJVM 161
                                                                          105 RPVGKPMTLVFRGFLVNISNPKALIFILAILPQFIEPTAPLFMQYVIIAATMVVVDLIVM 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42 WNALGLQLGLIMQIAIIAAGVGAVLAASATAFQVIKWFGVGYLVYLAYKQWRAL-PMDMS 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLASTQ---SRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVV 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MILEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLK 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: X_{u}^{\perp}, \hat{H}^{\perp}. TITLE OF INVENTION: Identification of Essential Genes in Microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR FILING DATE: 2000-05-25
PRIOR FILING DATE: 2000-05-25
PRIOR FILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
PRIOR PILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/230,335
PRIOR FILING DATE: 2000-09-06
PRIOR PILING DATE: 2000-09-06
PRIOR PLING DATE: 2000-10-23
PRIOR PILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-11-27
PRIOR FILING DATE: 2000-12-22
PRIOR PILING DATE: 2001-02-09
PRIOR FILING DATE: 2001-02-06
PRIOR FILING DATE: 2001-02-06
PRIOR FILING DATE: 2001-02-06
PRIOR FILING DATE: 2001-02-06
PRIOR FILING DATE: 2001-02-06
PRIOR FILING DATE: 2001-02-06
PRIOR FILING DATE: 2001-02-06
PRIOR FILING DATE: 2001-02-06
PRIOR FILING DATE: 2001-02-06
PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PAINA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33.4%; Score 354.5; DB 12; Length 211; 32.3%; Pred. No. 4.1e-31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69; Indels
                                                                                                                                                                             162 IGYATLAQRIALWIKGPKOMKALNKIFGSLFMLVGALLAS 201
                                                                                                                                                                                                                                                   165 AGYTGLASKVLRALKTPRÓQRRLNRTFASLFVGAAGFLAT 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2003-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 67883, Application US/10282122A Publication No. US20040029129A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/191,078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 60/206,848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Wang, Liangsu
APPLICANT: Zamudio, Carlos
APPLICANT: Halone, Cheryl
APPLICANT: Haselbeck, Robert
APPLICANT: Oblisen, Rari
APPLICANT: Oblisen, Rari
APPLICANT: Wall, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Trawick, John
Carr, Grant
Yamamoto, Robert
Førsyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Pseudomonas putida
US-10-282-122A-67883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 32.3
Matches 74; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53
```

g

ö

ò g

```
THILE OF INVENTION: Identification of Essential Genes in Microorganisms FILE REFERENCE: ELITRA.034A
CURRENT APPLICATION NUMBER: US/10/282,122A
CURRENT FILING DATE: 2000-02-20
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR APPLICATION NUMBER: 60/200,32-21
PRIOR PLING DATE: 2000-05-23-21
PRIOR PLING DATE: 2000-05-23-21
PRIOR PLING DATE: 2000-05-23-21
PRIOR PLING DATE: 2000-05-6
PRIOR PLING DATE: 2000-05-6
PRIOR PLING DATE: 2000-05-6
PRIOR PLING DATE: 2000-05-6
PRIOR PLING DATE: 2000-05-6
PRIOR PLING DATE: 2000-05-6
PRIOR PLING DATE: 2000-10-23
PRIOR PLING DATE: 2000-10-23
PRIOR PLING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR PLING DATE: 2000-12-22
PRIOR PLING DATE: 2000-12-22
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR PLING DATE: 2001-20-6
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76 WAGAAYLIWLGIQOWRA-AGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVFLAALFPQ 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50 WFGVAYLLYLAYLQWTAPVKDIEIQHEKKDKSVSALLLNGFVVNISNPKAIVFLLAVLPQ 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135 FIMPQOPQLMQXIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQMKALNKIFGSLFML 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MSSGLNYGF------RHGYWNAIGLQIALLIQIMIVAAGVGVLFATTPLAFGAVK 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28 MITSLNHGYPAGGVYCWASDRIGDSYCAGWR------GVGTLFSRSVIAFEVLK 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66; Indels 24; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 181,
166 TLAORIALWIKGPKOMKALNKIFGSLFMLVGALLASAR 203
                                                    | | :: :::||||||| ||: | 169 LLAAKVLRMIRKAHHIRWMRVFGSLFILAGVFLATFR 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 27.4%; Score 291; DB 12; Best Local Similarity 33.5%; Pred. No. 4.1e-24; Matches 64; Conservative 37; Mismatches 66;
                                                                                                                                                                                                                                                                                                                    Sequence 44873, Application US/10282122A
Publication No. US20040029129A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    // TYPE: PRT
// ORGANISM: Acinetobacter baumannii
US-10-282-122A-44873
                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Warg, Liangsu
APPLICANT: Warg, Liangsu
APPLICANT: Malone, Carlos
APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari
APPLICANT: Zyskind, Uddith
APPLICANT: Trawick, John
APPLICANT: Trawick, John
APPLICANT: Yamamoto, Robert
APPLICANT: Yamamoto, Robert
APPLICANT: Persyth, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           195 VGALLASARHA 205
    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

ò 셤 ò g ò

```
||:: |
170 AALLLSTVHQA 180
```

Search completed: March 24, 2004, 21:21:52 Job time: 42 secs

GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.	- protein search, using sw model	March 24, 2004, 21:12:37 ; Search time 20 Seconds

OM protein

(without alignments) 985.963 Million cell updates/sec Run on:

US-09-847-392-2 1061 1 WTLEWWFAYLLTSIILTLSP.......KIFGSLFMLVGALLASARHA 205 BLOSUM62 Gapop 10.0 , Gapext 0.5 Title: Perfect score: Sequence: Scoring table:

283366 segs, 96191526 residues Searched:

283366 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries PIR\_78:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	homoserine/homoser	homoserine/homoser	probable homoserin		hypothetical prote	conserved hypothet	hypothetical prote	homoserine/homoser	hypothetical prote	RhtB family transp	hypothetical prote	RhtB family transp	conserved hypothet	RhtB family transp	conserved hypothet	RhtB family transp	hypothetical prote	hypothetical prote	dihydrodipicolinat	hypothetical prote	hypothetical prote	hypothetical prote	conserved hypothet	efflux protein, Ly	-14	hypothetical prote	conserved hypothet	ъ	hypothetical prote
SUMMARIES	ID	12		***	A65187	96	G82358	σ	AF2805	8	8	E98301	AH3203	22	AB2683	16	30	27	4	7	G83082	2	4.	2	E87264	-	G85790	7	AG2684	9
	DB	7	~	ς,	~	7	N	N	(7	CI	N	N	Ŋ	7	~1	7	N	~	7	~	7	7	7	7	7	7	N	7	N	7
	Length	206	206	206	138	138	205	209	212	273	210	278	216	241	203	239	235	235	212	210	210	207	212	212	222	212	212	208	214	224
æ	Query	84.7	77.1	65.8	64.7	64.1	43.3	36.7		-		23.1									18.2									
	Score	98		698.5	œ	a)	•	œ	n	CO.	57	4	m	$\sim$		08.	S.	S.		S.	1,9	92.		n	m		86.	186		82.
	Result No.		7	٣	4'	ហ	φ	7	<b>ω</b>	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

hypothetical prote conserved hypothet	amino acid transpo	hypothetical prote	homoserine/homoser	probable amino aci	efflux protein, Ly	LysE family transl	transporter, lysE	efflux protein, Ly	conserved hypothet	RhtB family transp	dihydrodipicolinat	RhtB family transp	hypothetical prote	hypothetical prote
D83187 F83051	C82523	C55580	AG3485	A96009	E87252	H87498	AH3641	G87305	C82139	AI2614	H97396	AH2720	D97502	B83279
0 0	7	N	7	7	~	~	N	~	C)	~	N	N	~	7
207	213	216	249	218	210	212	205	208	206	205	224	210	210	204
17.0	16.8	16.8	16.2	16.1	15.9	15.7	15.7	15.7	15.6	15.4	15.4	15.2	15.2	14.7
		'n	7	ī	'n	167	'n.	'n.	166	'n	'n	'n	'n	99
180.5	178.5	178.	172	17	168.5	1	166.5	166.5	7	163	163.5	161.	161	15

## ALIGNMENTS

RESULT 1 B91223 C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia coli C; Date: Bscherichia colininary A; Residues colininary A; Molecule type: BnA A; Residues: 1-206 c,HAY> A; Residues: 1-206 c,HAY> A; Cross-references: GB: BaA000007; PIDN: BAB38177.1; PID: G13364230; A; Experimental source: strain O157:H7, substrain RIMD 050952 C; Genetics: A; Conservative 3; Mismatches 13; Indels A; Experimental source: strain O157:H7, substrain RIMD 050952 C; Genetics: A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Mismatches 13; Indels A; Conservative 3; Misma
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

RESULT 2 AF0917

homoserine/homoserine lactone efflux protein [imported] - Salmonella enterica subsp. en C; Species: Salmonella enterica subsp. enterica serovar Typhi
A;Note: this species has also been called Salmonella typhi
C;Date: 09-Nov-2001 #sequence\_revision 09-Nov-2001 #text\_change 18-Nov-2002
C;Accession: AF0917
R;Parkhill, J; Dougan, G; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, J.; Churcher H, T; Connerton, P; Cronin, A; Davis, P; Davies, R.M.; Dowd, L.; White, N.; Farrar Nature 413, 848-852, 2001

```
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Redidues: 1-138 < RLAT>
A;Redidues: 1-138 < RLAT>
A;Cross-references: GB.AE000458; GB:U00096; NID:g2367299; PIDN:AAC76827.1; PID:g1790258
A;Experimental source: strain K-12, substrain MG1655
R;Daniels, D.L.; Plunkett III, G.; Burland, V.; Blattner, F.R.
Science 257, 771-778, 1992
A;Title: Analysis of the Escherichia coli genome: DNA sequence of the region from 84.5
A;Reference number: S30660; MUID:92358234; PMID:1379743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Residues: 1-138 <STO>
A;Cross-references: GB:AE005174; NID:g12518698; PIDN:AAG59020.1; GSPDB:GN00145; UWGP:ZS
A;Experimental source: strain 0157:H7, substrain EDL933
                                                                             hypothetical 15.4 kD protein in recQ-pldB intergenic region - Escherichia coli (strain N,Alternate names: hypothetical protein f138
C,Decies: Escherichia
C,Dete: 12. Escherichia
C,Dete: 12. Sep-1997 #sequence_revision 17-Sep-1997 #text_change 01-Mar-2002
C,Accession: A65187; 83074
R;Blattner, F.R.; Plunkett III, G; Bloch, C.A.; Perna, N.T.; Burland, V.; Riley, M.; C.A.; Rose, D.J.; Mau, B.; Shoo, Y.
Science 277, 1453-1462, 1997
A;Title: The complete genome sequence of Escherichia coli K-12.
A;Reference number: A64720; MUID:97426617; PMID:9278503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D.J.; Mayhe
K.; Apodaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL Data Library, November 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pypochetical protein yigK [imported] - Escherichia coli (strain O157:H7, substrain I C;Species: Escherichia coli (c;Species: Escherichia coli (c;Species: Escherichia coli (c;Species: Escherichia coli (c;Species: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) (c;Accession: H86069) 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               128 LAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQMKALNKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 LAALFPQFIMPQQPQLMQYIVLGVTILVVDIIVMIGYATLAQRIALWIKGPKQMKALNKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68 VIAPEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: nucleic acid sequence not shown; translation not shown. A;Molecule type: DNA A;Residues: 'V', 2-138 <DAN> A;Residues: 'V', 2-138 <DAN> A;Cross-references: EMBL:M87049 A;Note: the nucleotide sequence was submitted to the EMBL Data Licitories:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64.1%; Score 680; DB 2;
ilarity 98.6%; Pred. No. 2.5e-57;
Conservative 1; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 686; DB 2;
Pred..No. 6.8e-58;
1; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 188 FGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64.7%;
ilarity 99.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FGSLFMLVGALLASARHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 137; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 136; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C,Genetics:
A,Gene: yigK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Gene: yigK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cispecies: Yersinia pestis
Cidate 102-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 02-Nov-2001
Cidate 102-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 02-Nov-2001
Cidate 102-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 02-Nov-2001
Cidate 12: Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.B. deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.; I. Mature 413, 523-527, 2001
Nature 413, 523-527, 2001
A.Title Genome sequence of Yersinia pestis, the causative agent of plague.
A.Faference number: AB0001; MUID:21470413; PMID:11586360
A,Authors: Parry, C.; Quail, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; A;Title: Complete genome sequence of a multiple drug resistant Salmonella enterica serov A;Reference number: AB0502; MUID:21534947; PMID:11677608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             probable homoserine/homoserine lactone efflux protein rhtB [imported] - Yersinia pestis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä,
                                                                                                                                                 A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-206 <PAR>
A;Cross-references: GB:AL513382; PIDN:CAD07932.1; PID:g16504477; GSPDB:GN00176
C;Genetics:
A;Gene: rhtB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-206 «KUR»
A;Cross-references: GB:ALS90842; PIDN:CAC93299.1; PID:g1S981746; GSPDB:GN00175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LVGVGLGTLFSRSLIAFEILKWAGAAYLIWLGIQQWRAAGAIDLHTLAQTQSRGRLFKRA 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VEVNLINPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MILEWWFAYLLISIILTLSPGSGAINTWTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        110 KLFKRAVFVNLTNPKSIVFLAALFPQFVLPQQPQVAQYLILGSTSVIVDIIVMIGYATLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MILEWWFAYLLTSIILTLSPGSGAINTWTTSLNHGYPAGGVYCWASDRIGDSYCAGWR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HIFORAVEVNITNEKSIVELAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23;
                                                                                                                                                                                                                                                                                                                                                                                                                             Length 206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
77.1%; Score 818.5; DB 2;
Best Local Similarity 78.7%; Pred. No. 2.8e-70;
Matches 166; Conservative 13; Mismatches 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 65.8%; Score 698.5; DB 2; Best Local Similarity 63.3%; Pred. No. 6.9e-59; Matches 136; Conservative 33; Mismatches 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIALWIKGPKOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      176 IKGPKQMKALNKAFGSLFMLVGALLASARHA 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-refer(C;Genetics:
A;Gene: rhtB
```

원

ઠ 셤 ò g ò g à g

ò g δ 엄 ò d ò 68 VIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNPKSIVF

ò

```
nomoserine/homoserine lactone efflux protein [imported] - Agrobacterium tumefaciens (st
2.Species: Agrobacterium tumefaciens
2.Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 18-Nov-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Accession: AF2805
R;Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M.; McClell, K. Kango, P.; Romero, P.; Zhang, S.
Science 294, 2317-2323, 2001
A;Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cer, B.W.
Yitle: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58
Reference number: AB2577; MUID:21608550; PMID:11743193
Accession: AF2805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                        4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     54 CAGWRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRA----AGAIDLKSLASTQSRRH 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110 LEQRAVEVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQ 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59 -------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLAS 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A.Residues: 1-212 <KUR>
A.A.Residues: 1-212 <KURA
A.Cross-references: GB:AE008688; PIDN:AAL42860.1; PID:g17740310; GSPDB:GN00186
A.Experimental source: strain C58 (Dupont)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54
                                                                                                                                                                                                                                                     o
o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        104 TOSRRHLFQ-----RAVEVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MILEWWEAYLLISILLILSPGSGAINTMITSLNHGYPAG-----GVYCWASDRIGD--SY
                                                                                                                                                                                                                                                                                                                                                                   45 GLQIGLALQIAIVAAGVGALLATSALAFSLIKWFGVAYLVYLAVRQWQAP-----PQALS
                                                                                                                                                                                                                        1 MILEWWFAYLLTSILLTLSPGSGAINTMITSLNHGYPAGGVYCWASDRIGDSYCAGWR--
                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20;
                                                                                                                                                                        44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 212;
                                                                                                                         Length 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158 IIVMIGYATLAQRIALWIKGPKOMKALNKIFGSLFMLVGALLASARHA
                                                                                                                   Query Match
36.7%; Score 389; DB 2; Length 20
Best Local Similarity 36.4%; Pred. No. 1.6e-29;
Matches 83; Conservative 37; Mismatches 64; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / Match 24.1%; Score 256; DB 2; Local Similarity 34.1%; Pred. No. 6.7e-17; les 71; Conservative 29; Mismatches BB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          170 RIALWIKGPKOMKALNKIFGSLFMLVGA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: rhtB
A;Map position: circular chromosome
C;Superfamily: hypothetical protein b1798
                                                                         C; Superfamily: hypothetical protein b1798
A, Experimental source: strain PAO1
C,Genetics:
A,Gene: PA5249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A, Status: preliminary A, Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cyperies: Pseudomonas aeruginosa
Cyperies: Pseudomonas aeruginosa
Cyberies: Pseudomonas aeruginosa
Cyberesion: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 15-Feb-2002
Cyberesion: C62990
Rystover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, M.J.; Br
adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, K.; Lim,
I Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000
A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an opportunistic patho
A;Reference number: A82950; MUID:20437337; PMID:10984043
A;Status: preliminary
A;Ressiques: DNA
A;Residues: 1-209 <2TO>
A;Cross-references: GB:AE004937; GB:AE004091; NID:g9951553; PIDN:AAG08634.1; GSPDB:GN001
                                                                                                                                                                                                                                                                                                                                                 conserved hypothetical protein VC0136 [imported] - Vibrio cholerae (strain N16961 serogr
C,Species: Vibrio cholerae
C,Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 02-Feb-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .Cross-references: GB:AE004104; GB:AE003852; NID:g9654534; PIDN:AAF93313.1; GSPDB:GN001
; Experimental source: serogroup O1; strain N16961; biotype El Tor
                                                                                                                                                                                                                                                                                                                                                                                                           C,Accession: G82358
R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R.J.;
Chardson, D.; Ernolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, H.; Dragoi, I.; Sellers, I.
I, R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser, C.M.
Nature 406, 477-483, 2000
A;Title: DNA Sequence of both chromosomes of the cholera pathogen Vibrio cholerae.
A;Reference number: A82035; MUID:20406833; PMID:10952301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ñ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 LINPKSIVFLVALFPQFIDPTRDHWPQFLVLGITTVTIDAIVMFGYTALAAQLGRYIRSP 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSLASTQSRRHLFQRAVFVN 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LINPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGP 178
                                                                               LAALFPOFIMPOOPOLMOYIVLGVTTIVVDIIVMIGYATLAORIALWIKGPKOMKALNKI 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein PA5249 [imported] - Pseudomonas aeruginosa (strain PAO1)
     LAALFPQFIMPQQPQLMQYIVLGVTIIVVDIIVMIGYATLAQRIALMIKGPKQMKALNKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHG--YPAGGVYCWASDRTGDSYCAGWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                69; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 43.4%; Pred. No. 3.2e-36;
Matches 89; Conservative 44; Mismatches 69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180 NIMTRMNKLFGSMFMGCGMLLATAK 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    179 KOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,Gene: VC0136
A,Map position: 1
C,Superfamily: hypothetical protein b1798
                                                                                                                                                                                   FGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                FGSLFMLVGALLASAXHA 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-205 <HEI>
                                                                                 128 ]
                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119
                                                                                                                                                                                   188
                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                               ò
                                                                                                                                 셤
                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

Cer

```
C,Genetics:
A,Gene: AGR L_2738
A,Map position: linear chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Status: preliminary
Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Accession: AH3203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gene: rhtB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
업
                                                         à
                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rimod, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, I erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M.; McClell, Karp, P.; Romero, P.; Zhang, S. Science 294, 2317-2323, 2001
A;Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm,
hypothetical protein AGR_C_3421 [imported] - Agrobacterium tumefaciens (strain C58, Cere C; Species: Agrobacterium tumefaciens
C; Species: Agrobacterium tumefaciens
C; Species: 30.58p-2001 #sequence_revision 30.5ep-2001 #text_change 18-Nov-2002
C; Accession: E97584
R; Goodner, B.; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, M.; Qurollo, B.; Goldman, A.; Liu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Markelz, B.; Science 294, 2323-2328, 2001
A; Title: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium tum A; Reference number: A97359; MUID:21608551; PMID:11743194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RhtB family transporter rhtB [imported] - Agrobacterium tumefaciens (strain C58, Dupont) C5pecies: Agrobacterium tumefaciens C7bate: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 18-Nov-2002 C3Accession: AC2962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ster, E.W.
A,Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58.
A,Reference number: AB2577; MUID:21608550; PMID:11743193
A,Accession: AC2982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60 GLGALLAASEFWFGVVKWVGVCYLVFLGIMLLRSRGM--LGALGSTEENGAASARSIFLK 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlResidues: 1-210 -KUR>
Alforsarreferences: GB.AE008689; PIDN:AAL44273.1; PID:g17741859; GSPDB:GN00187
A;Experimental source: strain C58 (Dupont)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQ-----SRRHLFQR 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         114 AVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATL-AQRI- 171
                                                                                                                                                                                                                                                                                                 A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-273 <KUR>
A;Cross-references: GB:AE007869; PIDN:AAK87631.1; PID:g15156981; GSPDB:GN00169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62 MPLENWLAFVAASAIMLAIPGPTILLVISYALGHGRKASTATVTGV-----ALGDFTAM 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 54 CAGWRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRA----AGAIDLKSLASTQSRRH 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       116 TASMLGLGALLATSAALFTGLKWIGAAYLIYLGIKLWRSPVGGBGA-DGQGVTGRERPLK 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110 LEQRAVEVNLTNEKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQ 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MILEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAG----GVYCWASDRIGD--SY 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88; Indels 20; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 23.1%; Score 245; DB 2; Length 210; Best Local Similarity 38.8%; Pred. No. 7.3e-16; Matches 62; Conservative 22; Mismatches 52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 24.1%; Score 256; DB 2; Best Local Similarity 34.1%; Pred. No. 8.8e-17; Matches 71; Conservative 29; Mismatches 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            235 AARNTIRKPKVQRIVNRTGGGL--LIGA 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         170 RIALWIKGPKQMKALNKIFGSLFMLVGA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A,Gene: AGR C 3421
A,Map position: circular chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A, Map position: linear chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A, Status: preliminary A, Molecule type: DNA A, Residues: 1-210 < KUR
                                                                                                                                                                                                                                                                           Accession: F97584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

```
Rhib family transporter rhtB [imported] - Agrobacterium tumefaciens (strain C58, Dupont C; Species: Agrobacterium tumefaciens C; Species: Agrobacterium tumefaciens C; Species: 11.-dan-2002 #sequence_revision 11.-dan-2002 #text_change 18-Nov-2002 C; Accession: AH3203 R; Mod, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M.; McClel Kap, Romero, P.; Zhang, S. Science 294, 2317-2323, 2001 A; Abuthors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C)Accession: E98301
R)Goddwan Hinkle, Gattung, S.; Miller, N.; Blanchard, M.; Qurollo, B.; Goldman R)Goddwan F. Itiu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Markelz, B. Science 294, 2323-2328, 2001
A,Title: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium tu A,Reference number: A97359; MUID:21608551; PMID:11743194
                                                                                                                                                                                                                                                                                                                                                              C58,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŝ
                                                                                                                                                                                                                                                                                                                                                          hypothetical protein AGR L 2738 [imported] - Agrobacterium tumefaciens (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Residues: 1-216 <KUR>
;Cross-references: GB:AE008687; PIDN:AA146046.1; PID:g17743805; GSPDB:GN00188
;Experimental source: strain C58 (Dupont)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-278 «KUR»
A;Cross-references: GB:AE007870; PIDN:AAK89935.1; PID:g15159890; GSPDB:GN00170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             114 AVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATL-AQRI- 171
ster, E.W.
A,Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens
A,Reference number: AE2577; MUID:21608550; PMID:11743193
                                                                                                                                                                                                                                                                                                                                                                                                    Cispecies: Agrobacterium tumefaciens
Cibate: 22-Oct-2001 #sequence_revision 22-Oct-2001 #text_change 18-Nov-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59 GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQ----SRRHLFQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
22.1%; Score 235; DB 2; Length 216;
Best Local Similarity 31.2%; Pred. No. 6.7e-15;
Matches 63; Conservative 38; Mismatches 89; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
23.1%; Score 245; DB 2; Length 27
Best Local Similarity 38.8%; Pred. No. 9.9e-16;
Matches 62; Conservative 22; Mismatches 52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----ALWIKGPKOMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                  172 ----ALWIKGPKOMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246 VLRKSGALW------LDRICGGALLTLAASLALYRRA
                                                                                                                                                                               178 VLRKSGALW-----LDRİCGGALLTLAASLALYRRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genome: plasmid Superfamily: hypothetical protein b1798
```

ਨੇ g

ል ď g à g

à

```
DiAccession: H97464
S. Gottung, S.; Miller, N.; Blanchard, M.; Qurollo, B.; Goldman, A.; Liu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Markelz, B.; Science 294, 2323-2328, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium tun
Reference number: A97359; MUID:21608551; PMID:11743194
                             Engineer Agrobacterium tumefaciens C58, PMID:11743193
                                                                                               A; Accession: AB2683
A; Status: preliminary
A; Molecule type: DNA
A; Molecule type: DNA
A; Residues: 1-203 < KUR>
A; Croser references: GB: AB5008688; PIDN: AAL41880.1; PID: g17739243; GSPDB: GN00186
A; Experimental source: strain C58 (Dupont)
C; Genetics:
A; Genetics:
A; Agene: rhte
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Genetics:
C; Gen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : : | :|| : || ||||::|
LAAILHTSALAFGIVKYIGVAYLLYMAMNTLRENGALKIDETRQPQKPARVIGEAILINL 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        153 INPKLSIFFFAFLPQFIAPGELSPTWRMIDLGLIFMALTFLVFALVGCFAASVRRQVVSR 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117 INPKLSIFFFAFLPQFIAPGELSPTWRMIDLGLIFWALTFLVFALYGCFAASVRQVVSR 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60 VGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNL 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120 TNPKSIVFLAALFPQFIMP-QQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW-IKG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cross-references: GB:AE007869; PIDN:AAK86673.1; PID:g15155857; GSPDB:GN00169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120 TNPKSIVFLAALFPOFIMP-QOPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW-IKG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         [imported] - Agrobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      conserved hypothetical protein BH0429 (AP001508) [imported] - Agrobacterium C;Species: Agrobacterium tumefaciens C;Decies: Agrobacterium tumefaciens C;Decies: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 18-Nov-2002 C;Accession: H9464 R;Goodner, B.; Hinkle, G.; Garrung C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S FLITSFIVAASPGTGVVYTLAAGLSQGAKASIIAAFG-----CTLGIVPHLLAAITG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60 VGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----AGWRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9 YLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9 YLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
19.7%; Score 208.5; DB 2;
Best Local Similarity 26.6%; Pred. No. 2e-12;
Matches 54; Conservative 37; Mismatches 93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19.7%; Score 208.5; DB 2 26.6%; Pred. No. 2.4e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37; Mismatches
er, E.W.
Title: The Genome of the Natural Genetic
Reference number: AB2577; MUID:21608550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          178 PKQMKALNKIFGSLFMLVGALLA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             177 PAVLAWLRRSFAAAFVALGAKLA 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PKQMKALNKIFGSLFMLVGALLA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A/Cross-references, cr...
C;Genetics:
A;Gene: AGR C_1583
A;Map position: circular chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity 26.6
54; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A, Accession: H97464
A, Status: preliminary
A, Molecule type: DNA
A, Residues: 1-239 < KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mac
Local Sim-
54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        占
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conserved hypothetical protein - Deinococcus radiodurans (strain R1)

2.Species: Deinococcus radiodurans

2.Species: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 03-Jun-2002

2.Accession: C75329

R.White, O.; Eisen, J.A.; Heidelberg, J.F.; Hickey, E.K.; Peterson, J.D.; Dodson, R.J.;

M.; Shen, M.; Vanathevan, J.J.; Lam, P.; McDonald, L.; Utterback, T.; Zalewski, C.; Ma
Science 286, 1571-1577, 1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cross-references: GB:AE002038; GB:AE000513; NID:g6459790; PIDN:AAF11548.1; PID:g645978
Experimental source: strain R1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AhrB family transporter rhtB [imported] - Agrobacterium tumefaciens (strain C58, Dupont)
2,Species: Agrobacterium tumefaciens
2,Date: 11-Jan-2002 #sequence_revision 11-Jan-2002 #text_change 18-Nov-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z,Accession: AB2683
R;Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, I erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M.; McClell: Karp, P.; Romero, P.; Zhang, S.
Science 294, 2317-2323, 2001
A;Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: Genome sequence of the radioresistant bacterium Deinococcus radiodurans R1.
A;Reference number: A75250; MUID:20036896; PMID:10567266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                     KSIVFLAALFPQFIMPQQPQL-MQYIVLGVTTIVVDIIVMIGYATLAQRIALWIK-GPKQ 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60 VGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLK---SLASTQSRR--HLFQRA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151 AMTELLNPKTALFFLAVIPQFVKPATGHVFGQFLLLGTTSVVVNTLNAMLVATLAGFLGA 210
                                                                                                                                                                     64 FSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAI-DLKSLASTQSRRHLFQRAVFVNLTNF 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              115 VFVNLTNPKSIVFLAALFPQFIMPQQPQLM-QYIVLGVTTIVVDIIVMIGYATLAQRIAL 173
                                                                                                      69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90
                                    63
                                                                     8 AYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-----G
                                 YLLTSIILTLSPGSGAINTMTTSLNHGYPAG-----GVYCWASDRTGDSYCAGWRGVGTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.5%; Score 228; DB 2; Length 241; 30.3%; Pred. No. 3.5e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   84; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              174 WIKG-PKOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Map position: 1
C; Superfamily: hypothetical protein b1798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 MKALNKIFGSLFMLVGALLASA 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 30.39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-241 <WHI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: C75329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gene: DR1999
                                 σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
```

9

⋩

g ਨੇ පු à ď

à

bacillus su homo sapien escherichia

kluyveromyc thermoprote haemophilus oncorhynchu mycobacteri

Q01625 Q64252 P77429 P05715 Q10858 P45064 P11631 Q91049 P28873 O15040

buchnera ap

gallus gall candida alb homo sapien

```
SEQUENCE FROM N.A.
SPECIES=E.coli, STRAIN=0157:H7 / RIMD 0509952;
MEDLINE=21156231; PubMed=11258796;
MEDLINE=21156231; PubMed=11258796;
MHAYSABI T., MAKINO K., Ohnishi M., Kurokawa K., Ishii K., Yokoyama K., Han C.-G., Ohtsubo E., Nakayama K., Murata T., Tanaka M., Tobe T., Iida T., Tasami H., Honda T., Sasakawa C., Ogasawara N., Yasunaga T., Kuhara S., Shiba T., Hattori M., Shinagawa H.;
"Complete genome sequence of enterohemorrhagic Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE_FROM N.A.
SPECIESES.coll; STRAIN=K12 / MG1655;
MEDLINE=82356334; PLDMed=1379743;
Daniels D.L., Plunkett G. III, Burland V.D., Blattner F.R.;
"Analysis of the Escherichia coli genome: DNA sequence of the region Erom 84.5 to 86.5 minutes";
Science 257:771-778 (1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
SPECIESES.COI; STRAIN-06:HI / CFT073 / ATCC 700928;
SPECIESES.COI; STRAIN-06:HI / CFT073 / ATCC 700928;
MEDLINE-22386234; PubMedel 2471157;
Welch R.A., Burland V., Plunkett G. III, Redford P., Roesch P.,
Rasko D., Buckles E.L., Liou S.-R., Boutin A., Hackett J., Stroud D.,
Mayhew G.F., Rose D.J., Shou S., Schwartz D.C., Perna N.T.,
Mobley H.L.T., Donnenberg M.S., Blattner F.R.;
"Extensive mesaic structure revealed by the complete genome sequence
of uropathogenic Escherichia coli.";
Proc. Natl. Acad. Sci. U.S.A. 99:17020-17024(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Genome sequence of enterohaemorrhagic Escherichia coli O157:H7.";
Nature 409:529-533(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
SPECIES=E col; STRAIN=0157:H7 / EDL933 / ATCC 700927;
SPECIES=E col; STRAIN=0157:H7 / EDL933 / ATCC 700927;
MEDLINE=21074935; PubMed=11206551;
Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D.,
Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A.,
Posfal G., Hackett J., Klink S., Boutin A., Shao Y., Miller L.,
Grotbeck E.J., Davis N.W., Lim A., Dimalanta E.T., Potamousis K.,
Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C.,
Welch R.A., Blattner F.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                            01-AUG-1992 (Rel. 23, Created)
15-UUL-1999 (Rel. 38, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Homoserine/homoserine lastone efflux protein.
RHTB OR B3824 OR C4746 OR Z5345 OR EC84754 OR SF3902 OR S3853.
                                                                                                                                                                                                                                                                                                                                                                                                      206 AA
                                                                                                                                                                                                                                                                                             ALIGNMENTS
                                                          ARCD_ECOLI
KHT2 KLULA
YHFTE
YHFTE
YHFTE
YHFTE
YHFTE
YHFTE
NUMM ONCMY
OCLAN CHICK
BMRP CANAL
Y297_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Enterobacteriaceae; Escherichia.
NCBI_TaxID=562, 217992, 83334, 623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Escherichia coli,
Escherichia coli 06,
Escherichia coli 0157:H7, and
Shigella flexneri
                                                                                                                                                                                                                                                                                                                                                                                                   RHTB ECOLI P27847;
RESULT 1
RHTB_ECOLI
P76249 escherichia 005406 bacillus su P28102 pseudomonas P74343 synechocyst Q8233 salmonella Q916n7 salmonella P75693 escherichia P75693 escherichia P75693 escherichia P7775 escherichia P7775 escherichia P7775 escherichia P7775 escherichia P7775 escherichia P7775 escherichia P7775 escherichia P7775 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77327 escherichia P77337 bacillus su P56601 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus P5661 myxococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P27847 escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              salmonella
salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vibrio para
rhizobium l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               escherichia
                                                                                                                                     March 24, 2004, 21:08:46; Search time 18 Seconds (without alignments) 593.021 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                       US-09-847-392-2
1061
1 MTLEWWFAYLLTSIILTLSP......KIFGSLFMLVGALLASARHA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0916n6
08z3b4
                  5.1.6
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                             141681 segs, 52070155 residues
               GenCore version
Copyright (c) 1993 - 2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NTDO CAEEL
SPSE BACSU
PPOX MYXXA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LYSE_CORGL
YD07_HAEIN
ATZN_ECOLI
                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AERSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COREF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORB VIBCH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOUSE
                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RHTB F
RHTB S
RHTB S
YEAS E
YRHP B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SHTC
SHTC
KAHN
FFIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYNX]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LYSE_
PROY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  668
668
                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SwissProt_42:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  898.5
819.5
818.5
195.5
195.5
100.5
134
134
126
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
126.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           89.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87
81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database :
                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
No.
                                                                                                                                          Run on:
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed, Usage by and for commercial entities requires a license agreement (see http://www.isb-aib.ch/announce) or send an email to license@isb-sib.ch).
                                                                                                                                                                          Yu J.;
"Genome sequence of Shigella flexneri 2a: insights into pathogenicity through comparison with genomes of Escherichia coli K12 and O157."; Nucleic Acids Res. 30:4432-4441(2002).
                                                                                  MEDLINE=22272406; PubMed=12384590;
Jin O., Yuan Z., Xu J., Wang Y., Shan Y., Lu W., Wang J., Liu H.,
Yang J., Yang F., Zhang X., Zhang J., Yang G., Wu H., Qu D., Dong J.,
Sun L., Xue Y., Zhao A., Gao Y., Zhu J., Kan B., Ding K., Chen S.,
Cheng H., Yao Z., He B., Chen R., Ma D., Qiang B., Wen Y., Hou Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "The novel transmembrane Escherichia coli proteins involved in the maino acid efflux."; FEBS Lett. 452,128-232(1999).
                                                                                                                                                                                                                                                                                        MEDILNE-22590274; Pubmed=12704152; MEDILNE-22590274; Pubmed=12704152; Wei J., Goldberg M.B., Burland V., Venkatesan M.M., Deng W., Fournier G., Mayhew G.F., Plunkett G. III, Rose D.J., Darling A., Mau B., Perna N.T., Payne S.M., Runyen-Janecky L.J., Zhou S., Schwartz D.C., Blattner F.R.; "Complete genome sequence and comparative genomics of Shigella flexner; serotype 2a strain 2457T."; Infect. Immun. 71:2775-2786 (2003)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: Belongs to the rht family.
-!- CAUTION: Ref. 1 sequence differs from that shown due to a frameshift in position 60.
0157:H7 and genomic comparison with a laboratory strain K-12.", DNA Res. 8:11-22\,(2001),
                                                                                                                                                                                                                                                              FROM N.A.
S.flexneri; STRAIN=2457T / ATCC 700930 / Serotype 2a;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPECIES=E.coli;
MEDLINE=99313167; PubMed=10386596;
Zakataeva N.P., Aleshin V.V., Tokmakova I.L., Troshin P.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1164F17738509C8C CRC64;
                                                SEQUENCE FROM N.A.
SPECIES=S.flexneri; STRAIN=301 / Serotype 2a;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Complete proteome.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M87049; AAA67620.1; ALT_FRAME.
EMBL; AE000458; AAC76227.1; ALT_FRAME.
EMBL; AE016769; AAM83179.1; -.
EMBL; AE005613; AAG59020.1; ALT_INIT.
EMBL; AE005614; -; NOT ANNOTATED_CDS.
EMBL; AE002567; BAB38177.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AP002567; BAB38177.1; -. EMBL; AE015396; AAN45337.1; -. EMBL; AE016990; AAP18861.1; ALT_INIT. BPIR; B91223; B91223. ECOGene; EG11469; rhtb.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR004778; Homoser_Thr_eff.
InterPro; IPR001123; LysE.
Pfam; PP01810; LysE; 1
TIGRFAMS; TIGR00949; 2A76; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22427 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       206 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fransport;
                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RANSMEN
```

Length 206;

DB 1;

84.7%; Score 898.5;

Query Match

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EWBL outstation - the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                              28
                                                                                  57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN=LT2 / SGSC1412 / ATCC 700720;
STRAIN=LT2 / SGSC1412 / ATCC 700720;
STRAIN=LT3 / SGSC1412 / ATCC 700720;
MCDILINE=21534948; PubMed=11677609;
MCDILINE=21534948; PubMed=116.7, Spieth J., Clifton S.W., Latreille P., Courtney L., Porwollik S., Ali J., Dante M., Du F., Hou S., Layman D., Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney E., Ryan E., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.;
"Complete genome sequence of Salmonella enterica serovar Typhimurium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -i- FUNCTION: Conducts the efflux of homoserine and homoserine lactone (By similarity).
-i- SUBGCELULAR LOCATION: Integral membrane protein (Potential).
-i- SIMILARITY: Belongs to the rht family.
                                                                                                                            1 MTLEWWFAYLLTSIILSLSPGSGAINTWTTSLNHGY-RGAVASIAGLQTGLAIHIVLVG-
                                                                                                                                                                                                                                                                                                           118 NITNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKG
                                                                                  1 MILEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTG---DSYCAGW
                                                                                                                                                                                                58 RGVGTLFSRSVIAFBVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RHTB OR STM3960 OR STMD1.30.
Salmonalla typhimurium.
Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriales,
Enterobacteriaceae, Salmonella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
E089B357D30750F2 CRC64;
89.9%; Pred. No. 1.4e-76; ative 3; Mismatches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Homoserine/homoserine lactone efflux protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Transport;Transmembrane;Complete proteome.TRANSMEM525TRANSMEM4565FOTENTIAL.TRANSMEM6888POTENTIAL.TRANSMEM117137POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      206 AA
                                                                                                                                                                                                                                                                                                                                                                                                                         178 PKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PKOMKALNKIFGSLFMLVGALLASARHA 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stydene; SG77777; rhtB.
InterPro; IPR004778; Homoser_Thr_eff.
InterPro; IPR001123; LysB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25
65
88
137
108
202
22322 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AF233324; AAF33432.1; -. EMBL; AE008884; AAL22804.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01810; LyBE; 1.
TIGRFAMS; TIGR00949; 2A76; 1.
  Best Local Similarity 89.9
Matches 187; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 413:852-856(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=602;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RHTB SALTY
Q9L6N6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                           ਨੇ
                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
```

```
TRANSMEM
                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 4
YEAS ECOLI
SETTTTES
                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                    'n
                                                                                                                                                                                                                                                       ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRA 114
                                                                                                                                                                                               56 LVGVGLGTLFSRSLLAFEILKWAGAAYLIWLGIQQWRAAGAIDLHTLAQTQSRGRLFKRA 115
                                                                                                                                                                                                                                   VEVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW 174
                                                                                                          1 MTPEWWFAYLLTSTLLSLSPGSGAINTWTTSINHGY-RGAVASIAGLOTG----LGIHIV 55
                                                                                      1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Parkhill J., Dougan G., James K.D., Thomson N.R., Pickard D., Wain J., Churcher C., Mungall K.L., Bantley S.D., Holden M.T.G., Sebathia M., Baker S., Basham D., Brooks K., Chillingworth T., Connection P., Cronin A., Davis P., Davies R.M., Dowd L., White N., Farrar J., Feltwell T., Hamlen N., Haque A., Hien T.T., Holkroyd S., Jagels K., Krogh A., Lareen T.S., Leather S., Moule S., O'Gacra P., Parry C., Whitehead S., Darrell B.G., Whitehead S., Darrell B.G., Moule S., O'Gacra P., Stevens K., Wolchebead S., Barrell B.G., Moule S., O'Gacra P., Stevens K., Complete genome sequence of a multiple drug resistant Salmonella enterica serovar Typhi CT18."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=TY2 / ATCC 700931;
MEDLINE=22531367; PubMed=12644504;
Deng W., Liou S.-R., Plunkett G. III, Mayhew G.F., Rose D.J.,
Burland V., Kodoyianni V., Schwartz D.C., Blattner F.R.;
"Comparative genomics of Salmonella enterica serovar Typhi strains Ty2 and CT18.";
                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Salmonella typhi.
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Salmonella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U. Bacteriol. 185:2330-2337(2003).
-!- FUNCTION: Conducts the efflux of homoserine and homoserine lactone (By similarity).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Fotential).
-!- SIMILARITY: Belongs to the rht family.
                                                    11,
               Length 206;
                                                    Indels
             Query Match 77.2%; Score 819.5; DB 1; Best Local Similarity 78.2%; Pred. No. 3.2e-69; Matches 165; Conservative 15; Mismatches 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                RHTE_SALTI STANDARD; PRT; 206 AA. 0823B4; 28-FEB-2003 (Rel. 41, Created) 28-FEB-2003 (Rel. 41, Last sequence update) 10-OCT-2003 (Rel. 42, Last annotation update) Homoserine lactone efflux protein.
                                                                                                                                                                                                                                                                                                         175 IKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                STRAIN=CT18;
MEDLINE=21534947; PubMed=11677608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RHTB OR STY3599 OR T3337.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature 413:848-852(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=601;
                                                                                                                                                            29
                                                                                                                                                                                                                                                                                                                                                                                                             RHTB_SALTI
                                                                                      à
                                                                                                                       В
                                                                                                                                                          ð
                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                 ò
```

EMBL; AL627278; CAD07932.1; -.

```
.
ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56 LVGVGLGTLFSRSLIAFEILKWAGAAYLIWLGIQOWRAAGAIDLHTLAQTQSRGRLFKRA 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115 VFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALW 174
                                                                                                                                                                                                                                                                                                                                                                   28
                                                                                                                                                                                                                                                                                                                                                                                          1 MTFEWWFAYLLTSTLSLSPGSGAINTWTTSINHGY-RGAAASIAGLQTG----LGIHIV 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-197251358; PubMed-9097040; Itoh T., Aiba H., Baba T., Prjita K., Hayashi K., Inada T., Isono K., Kaba H., Baba T., Prjita K., Hayashi K., Inada T., Isono K., Kaba H., Kaba H., Kaba M., Kitagawa M., Makino K., Miki T., Mizobuchi K., Mori H., Mori T., Motomura K., Nakade S., Nakamura Y., Nashimoto H., Nishio Y., Oshima T., Saito N., Sampei G., Seki Y., Sivasundarama S., Tagami H., Takeda J., Takemoto K., Wada C., Ramanoto Y., Horiuchi T., "A 460-kb DNA sequence of the Escherichia coli K-12 genome corresponding to the 40.1-50.0 min region on the linkage map."; DNA Res. 3:379-392(1996).

-I. SUBCELULLAR LOCATION: Integral membrane protein (Potential).
                                                                                                                                                                                                                                                                                                                                                                   1 MILEWWEAYLLISIILILSPGSGAINIMTTSLNHGYPAGGVYCWASDRIGDSYCAGWR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                59 ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSLASTQSRRHLFQRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.

STRAIN=K12 / MG1655;

MEDLINE=97426G17; PubMed=9278503;

Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
VCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                          11;
                                                                                                                                                                                                                                                                                   DB 1; Length 206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                   77.1%; Score 818.5; DB 1; Length 78.7%; Pred. No. 4e-69; ive 13; Mismatches 21; Indels
                                                                                                                                                                                                                                            40940D3DC0A5CAF2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YEAS_ECOLI STANDARD; PRT; 212 AA. P76249; 007959; 007971; 15-UUL-1998 (Rel. 36, Created) 15-ULL-1998 (Rel. 36, Last sequence update) 16-CTT-2011 (Rel. 40, Last annotation update) Hypothetical protein yeas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             175 IKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         176 IKGPKQMKALNKAFGSLFMLVGALLASARHA 206
                                                                                                   Transport; Transmembrane; Complete proteome.
TRANSMEM 5 25 POTENTIAL.
TRANSMEM 45 65 POTENTIAL.
                                                                                                                                         POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                         POTENTIAL.
EMBL; AE016845; AAO70865.1; -.
InterPro; IPR004778; Homoser_Thr_eff.
InterPro; IPR001123; LygE.
Pfam; PF01810; LysE; 1.
TIGRPAMS; TIGR00949; 2A76; 1.
                                                                                                                                                                                                                                              22308 MW;
                                                                                                                                                                                                                                                                                                      Best Local Similarity 78.7
Matches 166; Conservative
                                                                                                                                           65
88
137
168
202
                                                                                                                                                                                117
148
182
206 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YEAS OR B1798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=K12;
                                                                                                                                                                                TRANSMEM
TRANSMEM
```

us-09-847-392-2.rsp

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstands. The European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this stetement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 AWAGVATLIKTTPILFNIVRYLGAFYLLYLGSKILYAT----LKGKNSEAKSDEPQYGAI 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111 FQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQL-MQYIVLGVTTIVVDIIVMIGYATLAQ 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56 GWRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLK---SLASTQSRRH--L 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 LEWWFAYLLTSILLTLSPGSGAI----NTMTTSLNHGYPAG-GVYCWASDRTGDSYC--A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kunst F. Ogasanza N., Moszer I., Albertini A.M., Alloni G., Azevedo V., Bartero M.G., Bessieres P., Bolotin A., Borchert S., Bororiss R., Boursier L., Brans A., Braun M., Brignell S.C., Bron S., Broillet S., Burschi C.V., Caldwell B., Capuano V., Carter N.M., Choi S.K., Codani J.J., Connerton I.F., Cummings N.J., Daniel R.A., Enrian K.D., Eurington J., Rabret C., Fullich S.D., Emmerson P.T., Eritz C., Fujita M., Fujita Y., Fuma S., Galizzi A., Galleron N., Guiseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henalt A., Hilbert H., Holsappel S., Hosono S., Hullo M.F., Itaya M., Jones L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Firmicutes; Bacillales; Bacillaceae; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             342E0DF348C9AD9A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18.4%; Score 195.5; DB 1; 28.6%; Pred. No. 3.8e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RIALWIKGPKOM-KALNKIFGSLFMLVGALLAS 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=168;
MEDLINE=98044033; PubMed=9384377;
                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; D90823; BAA15593.1; -. EMBL; D90824; BAA15602.1; -. EMBL; F64940; F64940. Ecodenc; ECOGenc; EC13505; yeas. InterPro; IPR001123; LysE. Ffan; PF01810; LysE; 1. Hypothetical protein; Transment TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AE000274; AAC74868.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 188 208 P(
212 AA; 23200 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-JUL-1998 (Rel. 36, Create 15-JUL-1998 (Rel. 36, Last s 10-OCT-2003 (Rel. 42, Last s Hypothetical protein yrhp. YRHP OR BSU27100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus subtilis.
Bacteria; Firmicut.
NCBI_TaxID=1423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YRHP BACSU
005406;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KRHP_BACSU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1D
DTTDDDTTDDDTTDDTT
DDTTSDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDDTTSDTTDTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSDTTSD
SPHHHHH PHHHHH SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTION SOLUTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its west by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
Joris B., Karamata D., Kasahara Y., Klaerr-Blanchard M., Klein C., Kobayashi Y., Koetter P., Koningstein G., Kroph S., Kumano M., Kurita K., Lapidus A., Lardinois S., Lauber J., Lazarvic V., Lardinois S., Lauber J., Lazarvic V., Lasarvic V., Lardinois S., Manuel C., Medigue C., Medina N., Meillado R.P., Mixuno M., Mosell D., Nakai S., Noback M., Mone D., O'Reilly M., Ogawa K., Ogiwara A., Oudega B., Park S.H., Parescan E., Puic P., Purnelle B., Rapoport G., Rey M., Reynolds S., Reger M., Rivolta C., Schleich B., Roche B., Rose M., Sadaie Y., Sato T., Scanian E., Schleich S., Schroeter R., Scoffone F., Serkiguchi J., Sekweka A., Seror S.J., Serror P., Shin B.S., Soldo B., Sekiguchi J., Sekweka A., Seror S.J., Serror P., Shin B.S., Soldo B., Sekiguchi J., Tanaka Mill., Takenaru K., Arkeuchi M., Tamakoshi A., Taranka T., Terpetra P., Tognoni A., Tosato V., Uchiyama S., Vandenbol M., Vannier F., Vassarotti A., Wanbutt R., Wadler E., Wedler H., Weller H., Waltzenegger T., Winters P., Wipat A., Yamamoto H., Yamane K., Yasumoto K., Yata K., Yoshida K., Yoshikawa H.P., Zumstein E., Yoshikawa H., Danchin A., H., The Complete gequence of the Gram-positive bacterium Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6 AYIPIAAMMVIIPGADTMLVMKNTLRYG-PKAGRYNILGLATGLSF---WTVIAILGLSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 AYLLISIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRIGDSYCAGWR-----GVGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      114 AVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63 LFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDL-----KSLASTQSR--RHLFQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIJURE 57453479; PubMed = 9308178; Sorokin A., Bolotin A., Purnelle B., Hilbert H., Lauber J., Corokin A., Bolotin A., Purnelle B., Hilch S.D.; Boloterthoeft A., Ehrlich S.D.; Sequence of the Bacilius subtilis genome region in the vicinity of the lev operon reyeals two new extracytoplasmic function RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polymerase sigma factors SigV and SigZ.";
Microbiology 143:2319-2343(1997).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: Belongs to the rht family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             88; Indels 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Subtilist; Ed12304; yrhP.
InterPro; IPR004778; Homoser_Thr_eff.
InterPro; IPR001123; LysE.
Pfam; PF01810; LysE; 1.
TIGRNAMS; TIGR00949; 2A76; 1.
Hypothetical protein; Transmembrane; Complete proteome.
TRANSMEM 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  155 175 POTENTIAL.
210 Aa; 23389 Mw; 2A37D9419FDB0A58 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18.4%; Score 195; DB 1; 27.6%; Pred. No. 4.2e-11; ative 39; Mismatches 88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 174 WIKGPKOMKALNKIFGSLFMLVG 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; Z99117; CAB14652.1; -.
EMBL; U93874; AAB80873.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1-141 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 27.6%
Matches 56; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              Nature 390:249-256(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIR; F69975; F69975.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ଟ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
```

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SLR1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOUCH THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                               à
                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMED custation the European Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (1) SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=94222830; PubMed=8169201;
Kwon D.-H., Lu C.-D., Walthall D.A., Brown T.M., Houghton J.E.,
Abdelal A.T.;
Structure and regulation of the carAB operon in Pseudomonas
aeruginosa and Pseudomonas stutzeri: no untranslated region exists.";
J. Bacteriol. 176:2532-2542(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN=ATCC 15692, PAO1;
STRAIN=ATCC 15692, PAO1;
STRAIN=ATCC 15692, PAO1;
Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P.,
Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M.,
Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M.,
Brody L.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y.,
Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M.,
Smith K.A., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T.,
Reizer J., Saier M.H., Hancock R.E.W., Lory S., Olson M.V.;
"Complete genome sequence of Pseudomonas aeruginosa PAO1, an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       opportunistic pathogen.";
Nature 406:959-964(2000).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: Belongs to the rht family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria, Proteobacteria, Gammaproteobacteria, Pseudomonadales,
Pseudomonadaceae, Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117.0%; Score 180.5; DB 1; Length 216; 28.0%; Pred. No. 9.6e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein; Transmembrane; Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -> G (IN REF. 1).
-> R (IN REF. 1).
-> Q (IN REF. 1).
A30A08E714591B8D CRC64;
                                                                                                                                                                                                                187.7-5585
1938102; (994V45;
01-0CT-1994 (Rel. 30, Created)
16-0CT-2001 (Rel. 40, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
PA4757.
                                                                                                                                                                                                   216 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMEL, AEC04889, AAG08143.1; -.
PTR, C55580, C55580.
PTR, F83051; F83051.
InterPro, IPR00479; Homoser_Thr_eff.
InterPro; IPR001123; LysE.
Fram; Fr01810; LysE; 1.
TIGRRAMS, TIGR00949; ZA76; 1.
Hypotherical protein; Transmembrane; CoTRANSMEM 12 32 POTENTIAL.
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            211 PO
109 A
1122 K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; U04992; AAA19047.1; -.
EMBL; U81259; AAB39251.1; -.
                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                          Pseudomonas aeruginosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      122
216 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=287;
                                                                                                                                                                                                   PSEAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                  T 6
PSEAE
                                     ų
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swisz Institute of Bioinformatics and the BMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licensee&leb_eib.ch).
                                                                                                                                                                                                                                         111
                                                                                                                                                                                                                                                                                   61 ALGVASLLKABEPMLFIGLKYLGAAYLFYLGVGMLRGAWRKLRNFSATAAQABGVDVHQPF 120
                                                                                                                                                                                                                                                                                                                                                                                             ORAVEVNLINPKSIVELAALFPQFIMP--QOPQLMQYIVLGVTTIVVDIIVMIGYATLAQ 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 RKALLLSLSNPKALLFFISFFIQFVDPGYAYPGL-SFLVLAVILELVSALYLSFLIFTGV 179
                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70
                                                                                4 EWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAG-----GVYCWASDRTGDS--YCAG 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-97061201; PubMed=8905231;

MEDLINE-97061201; PubMed=8905231;

MEDLINE-97061201; PubMed=8905231;

Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,

Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,

Mocunti T., Matsuno A., Muraki A., Nakazaki N., Naruo K.,

Mokumura S., Shimpo S., Takeuchi C., Wada T., Watanabe A.,

Mada M., Yasuda M., Tabata S.,

Mada T., Watanabe A.,

Mada M., Tabata S.,

Mada T., Watanabe A.,

Manada M., Tabata S.,

Manada M., Massignment of the unicellular cyanobacterium

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the

Synechocystis sp. strain PCG6803. II. Sequence determination of the
                                                                                                                                   14 IILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGD---SYCAGWRGVGTLFSRSVIA
                                                                                                                                                                                                                                         57 WRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQO----WRAAGAIDLKSLASTQSRRHL-F
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22; Gaps
23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.9%; Score 147; DB 1; Length 206; 26.9%; Pred. No. 1.2e-06; ive 31; Mismatches 91; Indels 3
    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transmembrane; Complete proteome POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94 POTENTIAL.
170 POTENTIAL.
22041 MW; EF493754B8F264AF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Symechocystis sp. (strain PCC 6803).
Bacteria; Cyanobacteria; Chroococcales; Symechocystis.
NCDI_TaxID=1148;
    90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              170 RIALWIKGPKOMKA-LNKIFGSLFMLVGALLASA 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Hypothetical protein shr1627.
    41; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; D90914; BAA18437.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; S76178; S76178.
InterPro; IPR001123; LysE.
Pfam; PF01810; LysE; 1.
Hypothetical protein; Transm
TRANSMEM 47 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53; Conservative
    60; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               150 1
206 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 7
YG27_SYNY3
ID YG27_SYNY3
AC P74343;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
```

```
a
                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
--FEVLKWAGAAYLIWLGIQQWRA-----AGAIDLKSLASTQSRRHLFQRAVFVNLTNP 122
                    123 KSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGPKQMK 182
                                                                                                                                                                                                                                                                                                                                                                                                           Parkhill J., Dougan G., Jates K.D., Thomson N.R., Pickard D., Wain J., Churcher C., Mungall K.L., Bentley S.D., Holden M.T.G., Sebaihia M., Baker S., Basham D., Brooks K., Chillingworth T., Connerton P., Cronin A., Davis P., Davis R.M., Dowd L., White N., Farrar J., Feltwell T., Hamlin N., Haque A., Hien T.T., Holroyd S., Jagels K., Krogh A., Larsen T.S., Leather S., Moule S., O'Gaora P., Parry C., Quail M.A., Rutherford K., Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.; Simmonds M., Skelton J., Stevens K., "Complete genome sequence of a multiple drug resistant Salmonella enterica servar Typhi CT18.",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=TY2 / ATCC 700931;
MEDLINE=22531367; PubMed=12644504;
Deng W., Liou S.-R., Plunkett G. III, Mayhew G.F., Rose D.J.,
Burland V., Kodoyianni V., Schwartz D.C., Blattner F.R.,
"Comparative genomics of Salmonella enterica serovar Typhi strains Ty2 and CT18.";
                                                                                                                                                                                                                                                                                                           Bacteria, Profeobacteria, Gammaproteobacteria, Enterobacteriales;
Enterobacteriaceae, Salmonella,
NCBL_TaxID=601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U. Bacteriol. 185:2330-2337(2003).
-- FUNCTION: CONDUCTS THE BFFLX OF THREONINE (By similarity).
-- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-- SIMILARITY: Belongs to the rht family.
                                                                                                                                                                                                                              Z8-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
10-CT-2003 (Rel. 42, Last annotation update)
Threonine efflux protein.
FHTC OR STY3600 OR T3338.
Salmonella typhi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transport; Transmembrane; Complete proteome.

TRANSMEM 1 21 POTENTIAL.

TRANSMEM 44 64 POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AE016845; AA070866.1; -.
InterPro; IPR004778; Homoser_Thr_eff.
InterPro; IPR01123; LygE.
Pfan; PF01810; LygE; 1.
TIGRROM9; TIGRO0949; 2A76; 1.
                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=21534947; PubMed=11677608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AL627278; CAD07933.1; -.
                                                                                                           183 ALNKIFGSLFMLVGALL 199
                                                                                                                                   186 IMNYLAGALMISVGVFL 202
                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                             [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  [2]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=CT18
                                                                                                                                                                                        RHTC SALTI
ID RHTC SALTI
AC Q8Z3B3;
                                                                                                                                                                             RESULT 8
                        g
                                                    ò
                                                                             g
                                                                                                         ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                    61 GTLFSRSVJAFEVLKW-----AGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHL--- 110
                                                                                                                                                                                                                                                                                                                                                                                                                    56 ALLGLHIII--EKMAWLHTIIMVGGGLYLCWMGYQMLRGA----LKKQDAAASSPHIELA 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111 -----FQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVT------TIVVD 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     110 QSGRSFLKGLLTNLSNPKAIIYFGSVFSLFVGDNVGAAARWGIPALITLETLAWFTVVAS 169
                                                                                                                                                                                                                                                                            52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=21534948; PubMed=11677609; MCClelland M., Sanderson K.B., Spieth J., Clifton S.W., Latreille P., MCClelland M., Sanderson K.B., Spieth J., Clifton S.W., Layman D., Leonard S., Nguyen C., Scott K., Holmes A., Grewal N., Mulvaney E., Ryan B., Sun H., Florea L., Miller W., Stoneking T., Nhan M., Waterston R., Wilson R.K.; Complete genome sequence of Salmonella enterica serovar Typhimurium
                                                                                                                                                                                                        6 WFAYLLTSILLTLSPGSGAINTMTTSLNHGYFAG-----GVYCWASDRTGDSYCAGWRGV
                                                                                                                                                                                                                                                                        5 FFTVAMVHIVALMSPGPDFFFVSQTAVSRSRKEAMMGVLGITCGV------MVWAGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nature 413:852-856(2001).
-!- FUNCTION: CONDUCTS THE EFFLUX OF THREONINE (By similarity).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: Belongs to the rht family.
                                                                                                                                        52;
                                                                Length 206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                158 IIVMIGYATLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        170 LFALPKWRRGYÓKLÁKWIDG-----FAGALFAGFGIHLIISK 206
                                                                                                                                    92; Indels
22480 MW; E9DFCDF4E42D46A0 CRC64;

    Transport;
    Transmembrane;
    Complete proteome.

    TRANSMEM
    1
    21

    TRANSMEM
    4
    64
    POTENTIAL.

    TRANSMEM
    67
    87
    POTENTIAL.

    TRANSMEM
    150
    173
    POTENTIAL.

    SEQUENCE
    206
    AA;
    22498
    MW;
    080477853FC2733F
    CRC64;

                                                                12.6%; Score 134; DB 1;
22.1%; Pred. No. 1.9e-05;
tive 32; Mismatches 92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         206 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FROM N.A.
T2 / SGSC1412 / ATCC 700720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           StyGéne, SG7???; rhtC.
InterPro, IPR004778; Homoser_Thr_eff.
InterPro, IPR001123; Lyss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Enterobacteriaceae; Salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AF23324; AAF33433.1; -. EMBL; AE008884; AAL22803.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01810; LysE; 1.
TIGREAMS; TIGR00949; 2A76; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Threonine efflux protein.
RHTC OR STM3959 OR STMD1.31.
Salmonella typhimurium.
                                                                                                                                        50; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                      Best Local Similarity
206 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=602;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RHTC SALTY
Q9L6N7;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                    Query Match
                                                                                                                                        Matches
```

```
85
164
213
223 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YFIK ECOLI
P38101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=K12;
TRANSMEM
TRANSMEM
CONFLICT
SEQUENCE
                                                                                                                                                                         Query Match
                                                                                                                                                                                                                 Best Loc
Matches
   FT
FT
SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A PARA RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RANGER RA
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bicinformatics and the EMBL outstation the Buropean Bicinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@iBb-sib.ch).
                                                                                                    8
                                                                                                                                                                                                                                                                                                    GTLFSRSVIAFEVLKW-----AGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHL--- 110
                                                                                                                                                                                                                                                                                                                                                                 56 ALLGLHLII--EKMANLHTIIMVGGGLYLCMMGYQMLRGA----LKKQDAAASSPHIELA 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 WFAYLLTSILLTLSPGSGAINTMTTSLNHGYPAG-----GVYCWASDRTGDSYCAGWRGV 60
                                                                                                                                                                                                                                          55
                                                                                                                                                                                                                                   S FFIVAMVHIVALMSPGPDFFFVSQTAVSRSRKEAMMGVLGITCGV------MVWAGV
                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=K12 / MG1655;
MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

Duncan M., Allen E., Araujo R., Aparicio A.M., Chung E., Davis K.,

Ederspiel N., Hyman R., Kalman S., Komp C., Kurdi O., Lew H.,

Lin D., Namath, Ay, Oefner P., Roberts D., Schramm S., Davis R.W.;

Submitted (NOV-1996) to the EMBL/Genbank/DDBJ databases.

-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).

-! SIMILARITY: Belongs to the rht family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                                                                                    52;
                                                                                                                                                                                                                                                                                                                                                                                                                                         ----FQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVT----
                            12.6%; Score 134; DB 1; Length 206; 22.1%; Pred. No. 1.9e-05; Live 32; Mismatches 92; Indels E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158 IIVMIGYATLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            170 LFALPKMRRGYQRLAKWIDG------FAGALFAGFGIHLIISR 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein; Transmembrane; Complete proteome.
22 42 POTENTIAL.
59 79 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YAHN ECOLI STANDARD; PRT; 223 AA. P75631 P71307; P76531 P71307; P76531 P71307; P704-1997 (Rel. 35, Last sequence update) 16-CCT-2001 (Rel. 36, Last annotation update) 14-Pochetical protein yahn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ecodene; Edi3598; yahn.
InterPro; IPR004778; Homser_Thr_eff.
InterPro; IPR001123; LysE.
Pfam; PF01810; LysE; 1.
TIGRFAMS; TIGR00949; 2A76; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AE000140; AAC73431.1; -.
EMBL; U73857; AAB18053.1; -.
PIR; H64759; H64759.
                     Query Match 12.6%
Best Local Similarity 22.1%
Matches 50; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hypothetical p
TRANSMEM
TRANSMEM 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YAHN_ECOLI
                                                                                                                                                                  à
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE C
```

```
71 GLFGLATLIIQCEEIFSLIRIVGGAYLLWFAWCSMRROSTPOMSTLOOPISAPWYVFFRR 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               114 AVFVNLTNPKSIVFLAALFPQFIMPQQP---QLMQYIVLGVTTIVVDIIVMIGYATLAQR 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MILEWWFAYLLT---SIILTLSPGSGAINTWITSLNHGYPAGGVYCWASDRIGDSYCAGW 57
                                                                                                                                                                                                                                                                                                                                                  12 ITMDPLHAVYLTVGLFVITFFNPGANLFVVVQTSLASGRRA-GVLTGLGVALGDAFYSGL 70
                                                                                                                                                                                                                                                                                                                                                                                                                     58 R--GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRH--LFQR
                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=K12;
MEDININE-9734980; PubMed=9205837;
MEDININE-9734980; PubMed=9205837;
Yamamoto Y., Aiba H., Baba T., Hayashi K., Inada T., Isono K.,
Itoh T., Kimura S., Kitagawa M., Makino K., Miki T., Mitsuhashi N.,
Micobuchi K., Mori H., Nakade S., Nakamura Y., Nashimoto H.,
Oshima T., Oyama S., Saito N., Sampei G., Satoh Y., Sivasundaram S.,
Tagami H., Takahashi H., Takeda J., Takemoto K., Uehara K., Wada C.,
Yamagata S., Horiuchi T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDILINE 97426617; PubMed=9278503;
Blattner 9.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Blattner F.R., Plunkett G. III, Bloch C.A., Rode C.K., Mayhew G.F., Kiley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J., Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nachimoto H., "Non-ribosomal proteins affecting the assembly of ribosomes in
                                                                                                                                                              DB 1; Length 223;
                                                                LRLIYEGVTQR -> YA (IN REF. 2).
E17F5ABC31EE3F26 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
                                                                                                                                                                                                                               94; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=K12;
Nashimoto H., Saito N.;
Submitted (SEP-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Escherichia coli.";
(In) Nierbaus K.H. (eds.);
The translational apparatus, pp.185-195, Plenum Press,
New York (1993);
                                                                                                                                                           11.9%; Score 126.5; DB 1
21.9%; Pred. No. 0.00011;
tive 48; Mismatches 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-0CT-1994 (Rel. 30, Created)
01-0CT-1994 (Rel. 30, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
Hypotherical protein yfiK.
YFIK OR B2578.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        195 AA
   POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171 IALWIKGPKQMKALNKIFGSL 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | : : : | ::
191 RAY----GRMQRVASRVIGAI 207
105 PC
184 PC
223 LE
24811 MW;
                                                                                                                                                                                                                               44; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
```

```
REVISIONS
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      116 FVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWI 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112 ALQEVNVKIILYGYTALSTFVLP-QTQALSWVV-GVSV----LLAMIG--TFGN--VCMA 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59 GVGTLFSRSVI---AFBVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAV 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 AFWTYTLITAMTPGPNNILALSSATSHGF------ROSTRVLAGMSLGFLIVMLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57 CAGISFSLAVIDPAAVHLLSWAGAAYIVWLA---WXIATSPTKED--GLQAKPISFWASF
"Construction of a contiguous 874-kb sequence of the Escherichia coli - K12 genome corresponding to 50.0-68.8 min on the linkage map and analysis of its sequence features."; and ysis of 113 (1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                             8 AYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-----
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                                                   Rudd K.E.;
Unpublished observations (AUG-1994).
-!- SUNCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: Belongs to the rht family.
                                                                                                                                                                                                                                                                                                                                                                                                                      80; Indels 38;
                                                                                                                                                                                                                                                                                                                                                                                             11.9%; Score 126; DB 1; Length 195;
24.5%; Pred. No. 0.0001;
tive 36; Mismatches 80; Indels
                                                                                                                                                                                                                  EMBL, D13169; -; NOT_ANNOTATED_CDS.

EMBL, D64044; -; NOT_ANNOTATED_CDS.

EMBL, AAC75631.1; -.

EMBL, D90886; BAA16464.1; -.

PIR, A65036; A65036.

ENGOGNE; EG12445; yfik.

InterPro, 1PR001123; LysE.

Pfam, FF01810; LysE; 1.

Pfam, FF01810; LysE; 1.

Pfam, FF01810; LysE; 1.

Pfam, SF01806.

28 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                        5F86B828DDDEC090 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-AUG-1992 (Rel. 23, Created)
15-UUL-1998 (Rel. 36, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Threconine efflux protein.
RHTC OR B3823 OR Z5344 OR ECS4753.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 206 AA
                                                                                                                                                                                                                                                                                                                                      POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                             POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   176 KGPKQMKALNKIFGSLFMLVGALL 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162 LAGHLFQRLFRQYGRQLNIVLALL 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (1)
STROUENCE FROM N.A.
STRAIN=K12 / MG1655;
MEDLINE=92358234; PubMed=1379743;
                                                                                                                                                                                                                                                                                                                                                             142 162 PH
195 AA; 21248 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Escherichia coli, and Escherichia coli 0157:H7.
                                                                                                                                                                                                                                                                                                                                                                                                                       50; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Enterobacteriaceae; Es
NCBI_TaxID=562, 83334;
                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                [5]
[DENTIFICATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RHTC ECOLI
                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                       PRANSMEM
                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                            Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
Particle D.L. Pillurett G. III. Burland V.D. Biattner P.B.;

The maintea D.L. Pillurett G. III. Burland V.D. Biattner P.B.;

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1932).

Edience 37771-78(1937).

Edience 49010-78(1937).

Edience 49010-78(1937).

Edience 49010-78(1937).

Edience 49010-78(1937).

Edience 49010-78(1937).

Edience 49010-78(1937).

Edience 5771-78(1937).

Edience 69010-78(1937).

Edi
```

```
111677,
01-OCT-1989 (Rel. 12, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
WGGA OR E2923.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           211 AA
                                                                                                                                                                        POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                POTENTIAL
                                                                                    EMBL; AE004479; AAG03806.1; -.
PIR; T30317; T30317.
Interpro; IPR001123; LysE.
Pfan; PF01810; LysE; 1.
Transmembrane; Complete proteome.
                                                                                                                                                                                                              21290 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 15-211 FROM N.A.
                                                                          EMBL; U79580; AAC23935.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                               122 KNVVYWGAL 130
                                                                                                                                                                                                                                                                                                                                                                                      123 KSIVFLAAL 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
CTRAIN=K12 / MG1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YGGA ECOLI
                                                                                                                                                  TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                            YGGA ECOLI
  셤
                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                          66 RSVIAFEVLKW-----AGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHL-----FQ 112
                                                                                                                                                                                                                                                                                                                                           RAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVT-----TIVVDIIVMIGY 164
                                                                                                                                                                                                                           65
                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                           11 LISIILTLSPGSGAINTMTTSLNHGYPAG----GVYCWASDRIGDSYCAGWRGVGTLFS
                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN=ATCC 15692 / PAO1;
STRAIN=ATCC 15692 / PAO1;
Stover C.K., Pham X.-O.T., Erwin A.L., Mizoguchi S.D., Warrener P.,
Hickey M.J., Brinkman F.S.L., Hurnagle W.O., Kowalik D.J., Lagrou M.
Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y.,
Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M.,
Smith K.A., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T.,
Reizer J., Saler M.H., Hancock R.E.W., Lory S., Olson M.V.;
"Complete genome sequence of Pseudomonas aeruginosa PAO1, an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. STRAIN=AICC 15692 / PAO1; Whitchurch C.B., Young M.D., Hobbs M., Mattick J.S.; Whitchurch C.B., Young M.D., Hobbs M., Mattick J.S.; Pseudomonas a earuginosa chemctactic transduction genes pill, chpA chpB and downstream genes chpC, chpD and chpE."; Submitted (NOV-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
                                                                                                                                                                                                   48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales; Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                         11.5%; Score 122; DB 1; Length 206; 21.0%; Pred. No. 0.00025; Artive 36; Mismatches 89; Indels
                                                                                                                                                  F64017878CC6D50D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                   RRGYORLAKWIDG-----FAGALFAGFGIHLIISR 206
                                                                                                                                                                                                                                                                                                                                                                            165 ATLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR 203
EMBL; M30198; -; NOT_ANNOTATED_CDS.
PIR, A98223; A98223.
Ecodene; Ed1468; rhtc.
InterPro; IPR004779; Homoser_Thr_eff.
InterPro; IPR001123; LysE.
Pfan; PF01810; LysE; 1.
TIGRPAMS; TIGR00949; 2A76; 1.
TRANSPORT; Transmembrane; Complete proteome.
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-UUL-1999 (Rel. 38, Created)
15-UUL-1999 (Rel. 38, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Chemotactic transduction protein chpB.
                                                                                                             POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                         67 87 PO
150 173 PO
206 AA; 22474 MW;
                                                                                                                                                                                                  46; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               opportunistic pathogen.";
Nature 406:959-964(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pseudomonas aeruginosa
                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHPE OR PA0417
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHPE PSEAE
O87005;
                                                                                                                         TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                            113
                                                                                                                TRANSMEM
                                                                                                                                                  SEQUENCE
                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHPE_PSEAE
                                                                                                                                                                                                  Matches
   ઠે
                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                            ò
```

```
the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63 LIGYEQVRIP-LTLACAAYLAWLGVQGLRDAWSPPLAAEDAGEQGRNAFGAGAAISLSNP 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 FLAALLFGFAFNVSPGAVFSETLRRGLTGGFRPA--LLVQLGSLIGDAVWALLGLTGLAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6 WFAYLLTSIILTLSPGSGAINTMTTSLNHGY-PAGGVYCWASDRTGDSYCA--GWRGVGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63 LESRSVIAPEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVNLTNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=K12 / CSS20;
MEDLINE-8313302; PubMed=2546007;
MEDLINE-8313302; PubMed=2546007;
MEDLINE-8313302; PubMed=2546007;
"Identification, molecular cloning and sequence analysis of a gene cluster encoding the class II fructose 1,6-bisphosphate aldolase, 3-phosphoglycerate kinase and a putative second glyceraldehyde 3-phosphoglycerate kinase and a putative second glyceraldehyde 3-nosphate dehydrogenase of Escherichia coli.";
MOI. Microbiol. 3:723-732(1989).
-i- SUBCELULLAR LOCATION: Integral membrane protein (Probable).
-i- SIMILARITY: BELONGS TO THE LYSE/YGGA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=K12 / M01655,
MEDLINE=97426617; PubMed=9278503;
MEDLINE=97426617; PubMed=9278503;
MEDLINE=97426617; PubMedt G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Videa J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Man B., Shao Y.,
"The complete genome sequence of Escherichia coli K-12.";
Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriales,
Enterobacteriaceae, Escherichia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          195553C048AAD099 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
10.9%; Score 116; DB 1;
Best Local Similarity 30.2%; Pred. No. 0.0009;
Matches 39; Conservative 21; Mismatches 63
```

```
completed: March 24, 2004, 21:15:12
ne : 20 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Search co
      STATATARABLATATARAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration
between the Swiss Institute of Bioinformatics and the EMBL outstation -
the Buropean Bioinformatics Institute. There are no restrictions on its
use by non-profit institutions as long as its content is in no way
modified and this statement is not removed. Usage by and for commercial
entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              117 AVTWLNPHVYLDTFVVLGSLGGQ--LDVEPK--RWFALG--TISASFLWFFGLALLAAWL 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60 VGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLAST----QSRRHLFQRAV 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FVNLTNP----KSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRI 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7 FAY-----LLTSIILTLSPGSGAINTMTTSLNHGYPAG-GVYCWASDRTGDSYCAGWRG 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 FSYYFQGLALGAAMILPLGPQNAFV--MNQGIRRQYHIMIALLCAISDLV--LICAGIFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=NCIME 1102;

MEDLINE=97431471; PubMed=9286976;

Swift S., Karlyshev A.V., Fish L., Durant E.L., Winson M.K.,

Swift S., Karlyshev A.V., Fish L., Durant E.L., Winson M.K.,

Chhabra S.R., Williams P., Macintyre S., Stewart G.S.A.B.;

Chotorum sensing in Aeromonas hydrosphila and Aeromonas salmonicida:
identification of the Luxil homologs AhyRI and AsaRI and their

cognate N-acylhomoserine lactone signal molecules.";

Bacteriol. 179:5271-5281(1997).

-1. SMCEELLULAR LOCATION: Integral membrane protein (Probable).

-1. SIMILARITY: BELONGS TO THE LYSE/YGGA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Proteobacteria; Gammaproteobacteria; Aeromonadales;
Aeromonadaceae; Aeromonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2DAFE27B6A9BE822 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10.7%; Score 113; DB 1; 24.9%; Pred. No. 0.0018; ive 36; Mismatches 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
28-FB-2003 (Rel. 41, Last annotation update)
Hypothetical protein yggA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    172 ALWIKGPKQMKALNKIFGSLFMLVGALLA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              171 APRLRTAKAQRIINLVVGCVMWFIALQLA 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL
                                                                                                                                                                                                                                                                                                                                                      EcoGene; Edili59; yggA.
InterPro; IPR00477; Lys exporter.
InterPro; IPR001123; LysE.
Pfam; PF01810; LysE; I.
TIGRFAMs; TIGR00948; 2a75; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23175 MW;
                                                                                                                                                                                                                           EMBL; U28377; AAA69090.1; -.
                                                                                                                                                                                                                                                         EMBL; AE000375; AAC75960:1; EMBL; X14436; CAA32607.1; -. PIR; B65077; QQEC5A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aeromonas salmonicida.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  211 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=645;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hypothetical
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGA AERSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FRANSMEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
   SOUND THE TENT OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
```

ò

```
(See http://www.isb-sib.ch/announce/
                           There are no restrictions on 
ug as its content is in no 
red. Usage by and for commer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        111 VLAMTLGVTLLNPHVYLDTLMLLGSFGSQFAEPLRP-----AFAAGAMLASLVWFYSLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             115 VP----VNLTNP----KSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59 GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQ----WRAAGAIDLKSLASTQSRRHLFQRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 10.5%; Score 111.5; DB 1; Length 206; Best Local Similarity 24.7%; Pred. No. 0.0024; Matches 40; Conservative 26; Mismatches 65; Indels 31
        and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     165 FGAAALSPWLARGRVQQAIDTIVGLIMLGLALQLASGALLAS 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   166 TLAQRIALWIKGPKQMKALNKIFG-----SLFMLVGALLAS 201
                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
POTENTIAL.
DIC2C492CDA0179A CRC64;
between the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There a use by non-profit institutions as long as i modified and this statement is not removed. Use entities requires a license agreement (See http or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL
                                                                                                                                                                             EMBL; U65741; AAB70019.1; ALT_INIT.
InterPro; IPR00477; Lys exporter.
InterPro; IPR001123; LysE.
Pfam; PF01810; LysE; 1.
TIGRFAMs; TIGR0548; 2a75; 1.
Hypothetical protein; Transmembrane.
TRANSMEM
                                                                                                                                                                                                                                                                                                                                           21
57
85
85
136
108
208
21505 MW;
```

```
08 2 ah0 yersinia pe

08 dd7 2 vibrio vuln

09 kvk7 vibrio ehol

08 7 kk4 vibrio para

09 htus pseudomonas

08 Brd4 pseudomonas

08 Brd4 pseudomonas

08 Brd4 bordetella

07 w 03 4 bordetella

07 w 03 4 bordetella

07 kb 00 preudomonas

08 Floria para

09 2 kb 00 para

09 2 kb 00 para

09 2 kb 00 para

09 2 kb 00 para

09 2 kb 00 para

09 8 kb 00 para

09 8 kb 00 para

09 8 kb 00 para

09 8 kb 00 para

09 8 kb 00 para

09 8 kb 00 para

09 8 kb 00 para

09 8 kb 00 para

09 8 kb 00 para

09 8 kb 00 para
                                                                                                                                                                                                                                                                                                   March 24, 2004, 21:12:07; Search time 45 Seconds (without alignments) 1437.361 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-847-392-2
1061
1 MTLEWWFAYLLTSIILTLSP.......KIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1017041
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of Mits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1017041 seqs, 315518202 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q8ZAHO
Q8DD72
Q9DD72
Q9HTU5
Q9HTU5
Q8BB79
Q7W0G4
Q7W0G4
Q7W0G4
Q7W2S4
Q9BHO
Q8BHO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_oranelle:*
sp_phage:*
sp_plant:*
sp_rodent:*
sp_virus:*
sp_virus:*
sp_virus:*
sp_virus:*
sp_virus:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sp_human:*
sp_invertebrate:*
sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sp_archea:*
sp_bacteria:*
sp_fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seg length: 0
Maximum DB seg length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPIREMBL 25:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 698.5
470.5
450.5
450.5
457.5
387.5
3112.5
311.5
311.5
281.5
281.5
281.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
283.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
```

Q98gtl rhizobium l Q7wqrs bordetella Q7wtx8 bordetella Q7wtx4 bordetella Q7wtx4 bordetella Q981y9 rhizobium Q91y9 rhizobium Q91y9 rhizobium Q981y1 rhizobium Q981rs pseudomonas Q981rs pseudomonas Q981yrs pseudomonas Q98xy1 rhizobium l Q98xy2 deinococcus Q98xy2 ahizobium l Q9rsx2 deinococcus Q98y1y bordetella Q7wyy8 bordetella Q7wyy8 bordetella Q7wys8 bordetella Q7wys8 bordetella Q7wys8 bordetella	75 <b>7</b> 7 8 8 8 8 8 9
	,0000000
22222222222222222222222222222222222222	
4 W W W W W W W W W W W W W W W W W W W	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	2010.00 2009.00 2009.00 2008.00 2008.00
11112222222222222222222222222222222222	0 W 4 4 4 4 4 4 0 W O H W W 4 R

## ALIGNMENTS

RESULT Q8ZAHO ID QC AC	1 8ZAH0 8ZAH0; 1-MAR-2002	PRELIMINARY; (Tremblrel, 20,	PRT; Created)	206 A	AA.
			Last sequence update) Last annotation updat	ence tatio	update)
E C	Putative homoserine/homos	Putative homoserine/homoserine lactone efflux protein. RHTB OR YP03831 OR Y0399.	ne lacto	ne eff	llux protein.
S	Yersinia pestis	is.			
ပ္ပ	Bacteria, Pro	teobacteria; Ga	mmaproted	pacte	Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
ဗ	Enterobacteri	Enterobacteriaceae; Yersinia.	•		
S S	NCBI_TaxID=632;	2;			
ЯP	SEQUENCE FROM N.A.	N.A.			
RG	STRAIN=CO-92	STRAIN-CO-92 / Biovar Orientalis;	alis;		
X.	MEDLINE=21470	413; PubMed=115	86360;		
R.	Parkhill J.,	Wren B.W., Thom	son N.R.,	Tith	Parkhill J., Wren B.W., Thomson N.R., Titball R.W., Holden M.T.G.,
RA	Prentice M.B.	, Sebaihia M.,	Jатев К.I	ਹ : :	Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.L.,
RA	Baker S., Bas	ham D., Bentley	S.D., B	cooks	Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M.,
R.A	Chillingworth	T., Cronin A.,	Davies I	χ.	Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G.,
æ	Feltwell T.,	Hamlin N., Holr	oyd S.,	Jagels	Feltwell T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V.,
Z.	Leather S., N.	Leather S., Moule S., Oyston P.C.F.,	P.C.F.,	Quail	Quail M., Rutherford K.,
R.	Simmonds M.,	Simmonds M., Skelton J., Stevens K.,		White	Whitehead S., Barrell B.G.;
RI	"Genome seque	"Genome sequence of Yersinia pestis,		the	the causative agent of plague.";
R E	Nature 413:52 [2]	3-527(2001).			
R.P.	SEQUENCE FROM N.A.	N.A.			
RC	STRAIN=KIM5 /	STRAIN=KIM5 / Biovar Mediaevalis;	alis;		
ž	MEDLINE=22137	MEDLINE=22137863; PubMed=12142430;	42430;		
Z	Deng W., Burl	and V., Plunket	t G. III,	Bout	in A., Mayhew G.F., Liss P.,
R	Perna N.T., R	lose D.J., Mau B	., Zhou s	, So	phwartz D.C.,
æ	Fetherston J.	D., Lindler L.E	., Bruba	ter R.	
RA A	Straley S.C.,	Straley S.C., McDonough K.A., Nilles M.L., Matson J.S.,	, Nilles	Σ.Π.	Matson J.S., Blattner F.R.,
RA	Perry R.D.;				
R.	"Genome seque	"Genome sequence of Yersinia pestis KIM.";	pestis	CIM.";	
RI	J. Bacteriol.	J. Bacteriol. 184:4601-4611(2002).	2002).		
품 2	EMBL; AJ414159;	9; CAC93299.1;			
š	Page 1	'** O O O O O O O O O O O O O O O O O O			

(1

```
111 TALLRKAVLINLTNPKSIVFLVALFPQFIDPSQDQVTQLAVLGITTVVIDAFVMLGYTTL 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59 GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRHLFQRAVFVN 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119 LINPKSIVELAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIKGP 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHG--YPAGGVYCWASDRTGDSYCAGWR 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAINEEL TOR NIGSEL / Serotype Ol;
STRAINEEL TOR NIGSEL / Serotype Ol;
Heidelberg J.F., Eisen J.A., Nelson W.C., Clayton R.A., Gwinn M.L.,
Dodson R.G., Haft D.H., Hickey E.K., Peterson J.D., Umayam L.A.,
Gill S.R., Nelson K.E., Read T.D. Tettelin H., Richardson D.
Ermolaeva M.D., Vamathevan J., Bass S., Qin H., Dragoi I., Sellers P.,
McDonald L., Utterback T., Fleischmann R.D., Nierman W.C., White O.,
Salzberg S.L., Smith H.O., Colwell R.R., Mekalanos J.J., Venter J.C.,
Fraser C.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'DNA sequence of both chromosomes of the cholera pathogen Vibrio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 16; Length 205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales;
Vibrionaceae; Vibrio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43.3%; Score 459.5; DB 16; Length
43.4%; Pred. No. 2.9e-35;
tive 44; Mismatches 69; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro, IPR001123, LysE.
Pfam. PF01810; LysE, 1.
Hypcthetical protein; Complete proteome.
ESEQUENCE 205 AA; 22099 MW; AE42CA6FA6EA1223 CRC64;
                                                                                                                                                                                                                                                                                                                                        01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Hypothetical protein VC0136.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                          171 ASQLGRFIRSEKVMGKINKVFGSMFMGCGALLAAAK 206
                                                                     168 AQRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIGR; VC0136; -.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0005293; F:lyeine permease activity;
GO; GO:0006865; P:amino acid transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180 NIMTEMNKLFGSMFMGCGMLLATAK 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                179 KOMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AE004104; AAF93313.1;
PIR; G82358; G82358.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24,
25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best_Local Similarity 43.4 Matches 89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. 2 (TrEMBLrel. 2 (TrEMBLrel. 2
                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nature 406:477-483 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cholerae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=666;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q87KK4;
01-JUN-2003
01-JUN-2003
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cholerae.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vibrio
                                                                                                                                                                                                                                                                                      Q9KVK7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q87KK4
                                                                                                                                                                                                                           RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DDT TAP BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA BY SEA B
                                                                  ò
                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
      음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110 KLFKRAVFVNLTNPKSIVFLAALFPQFVLPQQPQVAQYLILGSTSVIVDIIVMIGYATLA 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRH---- 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --LFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATL 167
                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----GVGTLFSRSVIAFBVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50 LAVHIVLVGVGLGALVSQSLLAFEILKWLGAAYLIWLGIQQWRAAGSLDLHALANSMPRR
                                                                                                                                                                                                                                                                                                                                                                                                           1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 WFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35; Gaps
                                                                                                                                                                                                                                                                                Query Match 65.8%; Score 698.5; DB 16; Length 206; Best Local Similarity 63.3%; Pred. No. 9.8e-58; Matches 136; Conservative 33; Mismatches 23; Indels 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rhee J.H., Kim S.Y., Chung S.S., Kim J.J., Moon Y.H., Jeong H.,
Choy H.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 16; Length 207;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobactería; Gammaproteobacteria; Vibrionales;
Vibrionaceae; Vibrio.
NCBL_TaxID=672;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GO, GG:0016020; C:membrane; IEA.
GO; GO:0005293; F:lysine permease activity; IEA.
GO; GO:0006865; P:amino acid transport; IEA.
GO; GO:0008865; P:amino acid transport; IEA.
Pfam: PF01 IPR001123; LysE.
Pfam: PF04101; LysE; 1.
Hypothetical protein; Complete proteome.
SEQUENCE 206 AA; 22321 MW; 61C3B7B259992435 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAR-2003 (TrEMBLrel. 23, Created)
1-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-UIN-2003 (TrEMBLrel. 24, Last annotation update)
Putative threonine efflux protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            170 TRIARWIKSPQQMKLLNRIFGGLFMLIGALLATAR 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44.3%; Score 470.5; DB 1
44.9%; Pred. No. 2.7e-36;
tive 39; Mismatches 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIALWIKGPKOMKALNKIFGSLFMLVGALLASAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            207 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 44.9%
Matches 97; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vibrio vulnificus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=CMCP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q8DD72
Q8DD72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                W11138.
80 K R R R R R S OS
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCOCC DETAILS TO THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE SECOND THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
```

7

4

44

```
100 TDGERPLGRPLTLVLRGFLVNASNPKAVIFMLAVLPQFIDPHQPLLAQYLIMGGTMIVVD 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                           59 ------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIOOWRAAGAIDLKSLAS 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104 TQSRRHLFQ-----RAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVD 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ---GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAA--GAIDLKSL 101
                                                                                                                                                                                                                                                                                                                                                      1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR-- 58
                                                                                                                                                                                                                                                                                                                                                                                       45 GLQIGLALQIAIVAAGVGALLATSALAFSLIKWFGVAYLVYLAVRQWQAP-----PQALS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-DC3000;
Buell R., Joardar V., Khouri H., Fedorova N., Tran B., Russell D.,
Buell R., Joardar V. Khouri H., Fedorova N., Tran B., Russell D.,
Buerly K., Utterback T., Durkin A., Kolonay J., Madupu R., Daugherty S.,
Brinkac L., Beanan M., Haft D., Selengut J., Nelson W., Davidsen T.,
White O., Fraser C., Collmer A.,
"Complete sequence of Pseudomonas syringae.";
Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases.
EMBL, AEDIGESS, AAOS3694.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pseudomonas syringae (pv. tomato).
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                      44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 16; Length 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             158 IIVMIGYATLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                          Length 209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .3e-26;
es 69; Indels
                               GO; GO:0016020; C:membrane; IEA.
GO; GO:005293; F:lygine permease activity; IEA.
GO; GO:006865; P:amino acid transport; IEA.
InterPro; IPR001123; LysE.
Ptam, PR01810; LysE.
Ptam, PR01810; LysE.
Hypothetical protein; Complete proteome.
SEQUENCE 209 Aa; 22346 MW; 6518DCAAA22FEB4F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               210 AA; 22572 MW; 1BE3DB62F3BD56B1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JUN-2003 (TrEMBLrel. 24, Last sequence update) 01-OCT-2003 (TrEMBLrel. 25, Last annotation update) Homoserine/homoserine lactone efflux protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MALETWLGFFAACWIISLSPGAGAIASMSCGLQYGFLRG-
                                                                                                                                                                                                                                          ch 36.7%; Score 389; DB 16; Similarity 36.4%; Pred. No. 1.3e-28; 83; Conservative 37; Mismatches 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GO; GO:0016020; C:membrane; IEA.
GO; GO:000529; F:lysine permease activity; IEA.
GO; GO:0006865; P:amino acid transport; IEA.
Pfam; PF01810; LysE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 210 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134.6%; Score 367.5; ilarity 34.5%; Pred. No. 1.3e Conservative 40; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-2003 (TrEMBLrel. 24, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                      Best Local Similarity
        C82990; C82990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
ses 76; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Complete proteome
SEQUENCE 210 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=323;
                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 088B79
                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     288B79
        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN A PACA SAN 
                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                55 ALVGAGIGALVAQSATAFIIKWVGAAXLVWLGIQKWR-----DTSGLIANESHKEMSGS 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRRH---- 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110 -LFQRAVEVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLA 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6 WFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR----- 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6 WLÄYVVTAIVFSLAPGSGTVNSISNGLSYG------TRKSLGAIVGLQIGLAIHI 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN=ATCC 15692 / PAO1;
MEDLINE=20437337; PubMed=10984043;
MEDLINE=20437337; PubMed=10984043;
Stover C.K., Pham X.-O.T. Erwin A.L., Mizoguchi S.D., Warrener P., Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M., Galtry L., Tolentino E., Westbrock-Wadman S., Yuan Y., Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M., Bantok L.L., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T., Reizer J., Saier M.H., Hancock R.E.W., Lory S., Olson M.V.; "Complete genome sequence of Pseudomonas aeruginosa PAO1, an
                                                                                                                                                     SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=RIMD 210633 / Serotype O3:K6;
STRAIN=RIMD 2210633 / Serotype O3:K6;
Makino K., Oshima K., Kurokawa K., Yokoyama K., Uda T., Tagomori K.,
Iijima Y., Najima M., Nakano M., Yamashita A., Kubota Y., Kimura S.,
Yasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;
"Genome sequence of Vibrio parahaemolyticus: a pathogenic mechanism
distinct from that of V. cholerae.";
Lancet 361743-749(2003).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 16; Length 205;
                                                                      Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales;
Vibrionaceae; Vibrio.
NCBI_TaxID=670;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hypothetical protein; Complete proteome.
SEQUENCE 205 AA; 21562 MW; 1505DC7F45FF4990 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.5e-35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      169 QRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AP005083; BAC61236.1; -.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0005293; F:lygsine permease activity; IEA.
GO; GO:0006865; F:lygsine permease activity; IEA.
InterPro; IPR001123; LysE.
Fam; PF01810; LysE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
43.1%; Score 457.5;
Best Local Similarity 43.3%; Pred. No. 4.5e
Matches 93; Conservative 39; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9HTU5;
01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last seq
01-JUN-2003 (TrEMBLrel. 24, Last ann
Conserved hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AE004937; AAG08634.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothetical protein PA5249.
PA5249.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    opportunistic pathogen.";
Nature 406:959-964(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                  Vibrio parahaemolyticus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pseudomonas aeruginosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9HTUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 5
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

28 44

```
28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q7WDS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                        RPVGKPMTLVFRGFLVNISNPKALIFILAILPQFIEPTAPLFMQYVIIAATMVVVDIJVM 164
45 GLQIALVAQIAIVAAGLGAVLAASEMAFTLIKWFGVAYLVYLGIKQWRASPTDLADESAV 104
                                                   102 ASTQSRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVM 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41 WNALGLQLGLIMQIAIIAAGVGAVLAASATAFQVIXWFGVGYLVYLAYKQWRAL-PMDMS 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ------GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGWR--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MSMEVWLGFFAACWVISLSPGAGAIASMSSGLQYGF--------WRGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100 SLASTQ---SRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DESGVRPIGKPLSLVFRGFLVNISNPKALVFMLAVLPQFLNPHAPLLPQYVAITVTMVTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDINE-2423060, PubMed=12534463;
Nelson K.E., Weinel C., Paulsen I.T., Dodson R.J., Hilbert H.,
Martins dos Santos V.A.P., Pouts D.E., Gill S.R., Pop M., Holmes M.,
Brinkac L., Beanan M., DeBoy R.T., Daugherty S., Kolomay J.,
Madupu R., Nelson W., White O., Peterson J., Khouri H., Hance I.
Chris Lee P., Holtzapple E., Scanlan D., Tran K., Moazzez A.,
Utterback T., Rizzo M., Lee K., Kosack D., Moestl D., Wedler H.,
Lauber J., Stjepandic D., Hoheisel J., Straetz M., Heim S.,
Klewitz C., Eisen J., Timmis K.N., Duesterhoeft A., Tuemmler B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
NCBI_TaxID=160488;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DIIVMIGYATLAQRIALWIKGPKOMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 16; Length 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Complete genome sequence and comparative analysis of the metabolically versatile Pseudomonas putida KT2440.";
Environ. Microbiol. 4:799-808 (2002).
EMBL; AE016774; AAN65831.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           210 AA; 22827 MW; 89E800A87428770A CRC64;
                                                                                                                                                                                                162 IGYATLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLAS 201
                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. 24, Created)
(TrEMBLrel. 24, Last sequence update)
(TrEMBLrel. 25, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match 33.4%; Score 354.5; DB 10. Local Similarity 32.3%; Pred. No. 2.2e-25; les 74; Conservative 41; Mismatches 69.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TIGR; PP0198; -.

GO; GO:0016020; C:membrane; IEA.

GO; GO:00160293; F:lysine permease activity;

GO; GO:0005293; F:lysine permease activity;

GO; GO:0006865; P:amino acid transport; IEA.

InterPro; IPR01123; LysE.

Pfan, PF01810; LysE; I.

COMPLEE proteome.

SEQUENCE 210 AA; 22827 MM; 89E800A874287
                                                                                                                                                                                                                                                                                                                                                     210 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       putida (strain KT2440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ransporter, LysE family.
                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2003
01-JUN-2003
01-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                         Q88RD4;
                                                                                                                                                                                                                                                                                           RESULT
                                                                                                    g
                                                   ò
                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                            DUTAL BEAR BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA SER BARRED DE LA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

Ź 509

PRT;

PRELIMINARY;

O7W0G4 RESULT 8 Q7W0G4 ID Q7W0C

```
50 ILFQFLIVAVGLGAVLATSELAFTLVKYAGVVYLIYLGMRQIRTDAAPVTVDAGD-PHRA 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106 SRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYA 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-REBG / ATCC BAA-588;
STRAIN-REBG / ATCC BAA-588;
MEDINE-22827954; PubMed=12910271;
Parkhill J., Sebaihia M., Preston A., Murphy L.D., Thomson N.,
Harris D.E., Holden M.T.G., Churcher C.M., Bentley S.D., Mungall K.L.,
Cerdeno-Tarraga A.M., Temple L., James K., Harris B., Quail M.A.,
Achtman M., Atkin R., Baker S., Basham D., Bason N., Cherevach I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----RGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGA---IDLKSLASTQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MILEWWFAYLLTSIILTLSPGSGAINTWTTSLNHGYPAGGVYCWASDRTGDSYCAGW---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27;
                                                                                                    Bacteria, Proteobacteria, Betaproteobacteria, Burkholderiales,
Alcaligenaceae, Bordetella.
NCBI_TaxID=520,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bordetella bronchiseptica (Alcaligenes bronchisepticus).
Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiales;
Alcaligenaceae; Bordetella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 16; Length 209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29.5%; Score 312.5; DB 16; Length 33.5%; Pred. No. 2e-21; ive 39; Mismatches 79; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      209 AA; 22779 MW; F77DDE3CDDD41E54 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        166 TLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-OCT-2003 (TrEMBLrel. 25, Created)
01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
11/9E family efflux protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               209 AA
   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
(TrEMBLrel. 25, TrEMBLrel. 25, (TrEMBLrel. 25,
01-OCT-2003 (TrEMBLrel. 25, 01-OCT-2003 (TrEMBLrel. 25, 01-OCT-2003 (TrEMBLrel. 25, LysE family efflux protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 33.5
nes 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                 Bordetella pertussis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Complete proteome.
SEQUENCE 209 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=518;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-2003
01-OCT-2003
```

ŝ

Ŋ

SWARRERERES

ò 임 ò g ò g 8

```
203 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170 RIALWIKGPKOMKALNKIFGSLFMLVGALLASAR
                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     203 AA; 21766 MW;
                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel. 24, C (TrEMBLrel. 24, I (TrEMBLrel. 25, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transporter, LysE family.
                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=160488;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Complete proteome
SEQUENCE 203 AA
                                                                                                                                                                                                                                                                                                                                                                                                       01-JUN-2003
01-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                              01-0CT-2003
                                                                                                                                                                                                                                                                                                                          RESULT 11
                                                                                                                                                                                                                                                                                                                                               098H00
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                      ð
                                                                                                                                                                               g
                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                  à
                                                                                                                                                                                                                         \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SCUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEATIN=12822 / ATCC BAA-587;

X MEDINEE-22827954; Pubmed=12910271;

R Parkhill J., Sebaihia M., Preston A., Murphy L.D., Thomson N.,

RA Harris D.E., Holden M.T.G., Churcher C.M., Bentley S.D., Mungall K.L.,

RA Cerdeno-Tarraga A.M., Temple L., James K., Harris B., Quall M.A.,

RA Achtman M., Atkin R., Baker S., Basham D., Baron N., Cherevach I.,

RA Achtman M., Atkin R., Baker S., Basham D., Davis P., Doggett J.,

RA Feltwell T., Goble A., Hamlin N., Hauser H., Holroyd S., Jagels K.,

RA Feltwell T., Goble A., Hamlin N., Hauser H., Holroyd S., Jagels K.,

RA Rabbinowitsch E., Rutter S., Sanders M., Saunders D., Seeger K.,

RA Sharp S., Simmonds M., Skelton J., Squares R., Squares S., Stevens K.,

Unwin L., Whitehead S., Barrell B.G., Maskell D.J.;

"Comparative analysis of the genome sequences of Bordetella pertussis,

RT Bordetella parapertussis and Bordetella bronchiseptica.";

RM Mat., Genet. 35:32-40(2003).

REMIL, BXK440486, CARS39608.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIRELVGRGFLINTMNPKGTVFLLAVVPQFVDPAQPLTQQYLALAGTLAFTDLVAMGVYT 168
                                                                                                                                                                                                                                                                                                                                                                                                                     -----RGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGA---IDLKSLASTQ 105
                                                                                                                                                                                                                                                                                                                                                                                                                                            SRRHLFORAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYA 165
                                                                                                                                                                                                                                                                                                                                                                                  4
Chillingworth T., Collins M., Cronin A., Davis P., Doggett J., Feltwell T., Goble A., Hamlin N., Hauser H., Holroyd S., Jagels K., Laather S., Moule S., Norberczak H., O'Neil S., Ormond D., Price C., Rabbinowitsch B., Rutter S., Sanders M., Saunders D., Seeger K., Sharp S., Simmonds M., Skelton J., Squares R., Squares S., Stevens K., Unwin L., Whitehead S., Barrell B.G., Maskell D.J.; Comparative analysis of the genome sequences of Bordetella pertussis, Bordetella parapertussis and Bordetella bronchiseptica."; Mat. Genet. 35:32-40(2003).

BMIL. BX640452; CAB35279.1; -. CCOMplete proteome.

COMPLETE PROTECTION, FINAL FINDERSCENTISE CRC64;
                                                                                                                                                                                                                                                                                                                                                               1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGW---
                                                                                                                                                                                                                                                                                                   27; Gaps
                                                                                                                                                                                                                                                            DB 16; Length 209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Betaproteobacteria; Burkholderiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29.4%; Score 311.5; DB 16; Length 209; 33.5%; Pred. No. 2.4e-21;
                                                                                                                                                                                                                                            29.4%; Score 311.5; DB 16; Leugu...
33.5%; Pred. No. 2.4e-21;
Mismatches 79; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            209 AA; 22721 MW; F77DDE3CDE27D16B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       166 TLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         39; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2003 (TrEMBLrel. 25, 01-OCT-2003 (TrEMBLrel. 25, 01-OCT-2003 (TrEMBLrel. 25,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria; B.
Alcaligenaceae; Bordetella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LysE family efflux protein BPP4329.
                                                                                                                                                                                                                                                                                                 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 33.5%
les 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bordetella parapertussis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Complete proteome
SEQUENCE 209 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=519;
                                                                                                                                                                                                                                                                                                                                                                                                                     28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                 Local
```

Q7W2S4

RESULT 10

1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDSYCAGW--- 57

Best Loca Matches

à

```
9
                                       58 ------RGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGA---IDLKSLASTQ 105
                                                                                                                                  106 SRRHLFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYA 165
                                                                                                                                                                                                   109 SIRELVGRGFLINTMNPKGTVFLLAVVPOPVDPAOPLTOOYLALAGTLAFTDLVAMGVYT 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51 DSYCAGWRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAG-AIDLKSLASTQSRRH 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         110 LFQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQ 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MALDIWLIYLLASIGLSLTPGPNSL----LALTHGALYGARRTLFTIVGGVLGFSA---- 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53 -LIALTMFGLSALLQTSAAVLSVLKWVGGAYLIWLGIQLWRSPGLQLELTAHSARLGNAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=22423060; PubMed=12534463; Melson K.J., Hilbert H., Nelson K.E., Wethel C., Paulsen IT., Dodson R.J., Hilbert H., Bartins dos Santos V.A.P. Foutes D.E., Gill S.R., Pop M., Holmes M., Brinkac L., Beanan M., A.P. Foutes D.E., Gill S.R., Kolonay J., Madupu R., Nelson W., White O., Peterson J., Khouri H., Hance I., Utterback T., Rizzo M., Lee K., Kosack D., Moestl D., Wedler H., Lauber J., Stjeppandic D., Hohelsel J., Straetz M., Helm S., Kiewitz C., Eisen J., Timmis K.N., Duesterhoeft A., Tuemmler B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pseudomonas putida (strain KT2440).
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 27.7%; Score 284; DB 16; Length 203; Best Local Similarity 35.5%; Pred. No. 1e-19; Matches 76; Conservative 32; Mismatches 84; Indels 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Complete genome sequence and comparative analysis of the metabolically versatile Pseudomonas putida KT2440."; Environ. Microbiol. 4;799-808(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6FA7474011ECFAB8 CRC64;
                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHG--YPA
                                                                                                                                                                                                                                                                        166 TLAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GO; GO:0016020; C:membrane; IEA.
GO; GO:0005223; F:lysine permease activity; IEA.
GO; GO:0006865; P:amino acid transport; IEA.
Pfam; PF01810; LysE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
```

```
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8EKH1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57 -----WRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSRR 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 ITIILILISFIGLĞVVIASSEFVFNIKWCĞAAYLIWLGIQAFRSKQNDFAKSDSAQVSTS 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HL--FQRAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYAT 166
                                                                                                                                                                                                                                                                                                                                                                                                                                          CRAIN=RIMD 2210633 / Serotype O3:K6;

X SEAIN=RIMD 2210633 / Serotype O3:K6;

X MEDINES22506444; PubMed=12620739;

X MEDINES22506444; PubMed=12620739;

X MIDINES22506444; PubMed=12, X Noveyama K., Uda T., Tagomori K.,

XA Iijima Y., Najima M., Nakano M., Yamaahita A., Kubota Y., Ximura S.,

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.;

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.,

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.,

X Tasunaga T., Honda T., Shinagawa H., Hattori M., Iida T.,

X Tasunaga T., Honda T., Irranscription, DNA-dependent; IEA.

DR GO: GO: 0006355; P: Regulation of transcription, DNA-dependent; IEA.

DR GO: GO: 0006355; P: Regulation of transcription, DNA-dependent; IEA.

DR METERPO: IPRO01023; LyBE.

DR PROSITE; PS00041; HTH_ARAC_FAMILY_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MILEWWFAYLLTSIILTLSPGSGAINTMITSLNHGYPAGGVYCWASDRIGDSYCAG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 16; Length 219;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-UN-2003 (TrEMBLrel. 24, Last annotation update)
01-UN-2003 (TrEMBLrel. 24, Last annotation update)
Putative amino acid efflux protein.
R02191 OR SMC01851.
R02191 OR SMC01851.
Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobianes; Rhizobiaceae; Sinorhizobium/Ensifer group; Sinorhizobium.
NCBI_TAXID=382;
                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales; Vibrionaceae; Vibrio. Vibrionaceae; Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio. Vibrio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Complete proteome. SEQUENCE 219 AA; 23558 MW; FBED455165D57500 CRC64;
                                                                                                                                                                01-JUN-2003 (TIEMBLrel. 24, Created)
01-JUN-2003 (TIEMBLrel. 24, Last sequence update)
01-JUN-2003 (TIEMBLrel. 25, Last annotation update)
Putative homoserine/homoserine lactone efflux protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LAQRIALWIKGPKQMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27.0%; Score 286.5; DB 1
29.7%; Pred. No. 5.8e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                211 AA
                                                                                                               219 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                  Vibrio parahaemolyticus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                 087PX1;
01-JUN-2003 (01-JUN-2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q92NK8
Q92NK8;
                                                                                                         Q87PX1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 13
Q92NK8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                    RESULT 12
                                                                                   Q87PX1
                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ਨੇ
```

```
59 GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSLASTQSRR---HLFQRAV 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 GLGALLATSAAVFTVLKWIGAAYLVWLGIKLWRAPVGNDSGSTVETSPAERPLRIFLHTY 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     116 FVNLINPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWI 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-2297666; PubMed=12368813; MEDLINE-2297666; PubMed=12368813; Medlalberg J.F., Paulsen I.T., Nelson K.E., Gaidos E.J., Nelson W.C., Read T.D., Eisen J.A., Seshadri R., Ward N., Methe B., Clayton R.A., Meyer T., Tsapin A., Scott J., Beanan M., Brinkac L., Daudherty S., DeBoy R.T., Dodson R.J., Durkin A.S., Haft D.H., Kolonay J.F., Madupu R., Peterson J.D., Umayam L.A., White O., Wolf A.M., Vamathevan J., Weidman J., Impraim M., Lee K., Berry K., Lee C., Mueller J., Khouri H., Gill J., Utterback T.R., McDonald L.A., Meldhyum T.V., Smith H.O., Venter J.C., Nealson K.H., Fraser C.M.; "Genome sequence of the dissimilatory metal ion-reducing bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MILEWWFAYLLTSIILTLSPGSGAINTMITSLNHGYPAGGVYCWASDRIGD--SYCAGWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120 AVTALNPKSILFFVAFLPQFLDLSRPLFAQMAIFETTFLILATINAALYAWLAAAAGSTI
                                                                                  Gloux S.,
                                                   Capela D., Barloy-Huller F., Gouzy J., Bothe G., Ampe F., Batut Capela D., Barloy-Huller F., Gouzy J., Bothe G., Ampe F., Batut Boistard P., Becker A., Boutry M., Cadieu E., Dreano S., Gloux Godrie T., Goffeau A., Kahn D., Kiss E., Lelaure V., Masuy D., Pohl T., Portecale D., Puenler A., Purnelle B., Ramsperger D., Renard C., Thebault P., Vandenbol M., Weidner S., Galibert F., "Analysis of the chromosome sequence of the legume symbiont Sinorhizobium meliloti strain 1021.", Proc. Natl. Acad. Sci. U.S.A. 98:9877-9882 (2001).

EMBL; ALS1789; CAG46770.1; -
GO; GO:0016203; F:lyaine permease activity; IEA.

GO; GO:0006823; F:lyaine permease activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; Gammaproteobacteria; Alteromonadales;
Alteromonadaceae; Shewanella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         / Match Local Similarity 33.8%; Score 281; DB 16; Length 211; Local Similarity 33.8%; Pred. No. 1.8e-18; hes 71; Conservative 27; Mismatches 106; Indels 6
                                                                                                                                                                                                                                                                                                                                                                                                                                             211 AA; 22293 MW; 7955F42044DBCF47 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             176 KGPKOMKALNKIFGSLFMLVGALLASARHA 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180 RKPNIRRIVNRLGGSLLIGAGFLTAGLKRA 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nat. Biotechnol. 20:1118-1123 (2002)
EMBL, AE015463, AAN53209.1; -.
TIGR, SO0122; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
GO:0016020; C:membrane; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAR-2003 (TrEMBLrel. 23,
01-MAR-2003 (TrEMBLrel. 23,
01-JUN-2003 (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001123; LysE. Pfam; PF01810; LysE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transporter, LysE family. S00122.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shewanella oneidensis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shewanella oneidensis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                          Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=70863;
```

```
ë
                                                                                                                                                                                                                                                                                                                                         56 GWRGVGTLFSRSVIAFEVLKWAGAAYLIWLGIQQWRAAGAIDLKSLASTQSR---RHLFQ 112
                                                                                                                                                                                                                                                                                                                                                                        113 RAVFVNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIA 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 GLGTLVLSSAVLFSVLKWVGAFYLIYLGVKIFRGASSAKLGDLBELSQASAKLAFGQSAF 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117 VNLTNPKSIVFLAALFPQFIMPQQPQLMQYIVLGVTTIVVDIIVMIGYATLAQRIALWIK 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59 GVGTLFSRSVIAFEVLKWAGAAYLIWLGIQOWRAAGAIDLKSL--ASTQSRRHLFQRAVF 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MTLEWWFAYLLTSIILTLSPGSGAINTMTTSLNHGYPAGGVYCWASDRTGDS-----YCA 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MILEWWFAYLLTSIILTLSPGSGAINTWTTSLNHGYPAGGVYCWASDRTGD--SYCAGWR 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 HELQTWLAFVAASTALLLIPGPTVLLVLSYAISQGKKV-AVATVAGVALGDFIAMSASLA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=PRID;
Zhong Z., Toukdarian A., Helinski D.R.;
Zhong Z., Toukdarian A., Helinski D.R.;
Zhong Z., Toukdarian A., Helinski D.R.;
Zhong Z., Toukdarian Bacechium Ruegeria isolate PRID.";
Elem the marine bacterium Ruegeria isolate PRID.";
Submitted (JUC-2011) to the EMBL/GenBank/DDBJ databases.
EMBL; AF416331; AAN05183.1; -.
GO; GO:00046821; C:extrachromosomal DNA; IEA.
GO; GO:0005233; F:lysine permease activity; IEA.
GO; GO:0006865; P:amino acid transport; IEA.
InterPro; IPR001123; LysE.
Plan; PF01810; LysE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Proteobacteria; Alphaproteobacteria; Rhodobacterales;
Rhodobacteraceae; Ruegeria.
NCBL_TaxID=185588;
                                                                                                                                                            Query Match
25.4%; Score 269; DB 16; Length 207;
Best Local Similarity 31.6%; Pred. No. 2.4e-17;
Matches 66; Conservative 41; Mismatches 90; Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 24.3%; Score 258; DB 2; Length 20; Best Local Similarity 33.5%; Pred. No. 2.6e-16; Matches 70; Conservative 36; Mismatches 95; Indels
                                                                                                                   207 AA; 22288 MW; 014AB6E422DC502B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      208 AA; 21671 MW; 4F4B77A48AF83D55 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-077-2002 (TrEMBLrel. 22, Created)
01-077-2002 (TrEMBLrel. 22, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
GO; GO:0005293; F:lysine permease activity; IEA. GO; GO:0006865; P:amino acid transport; IEA. InterPro; IPR001123; LysE. Iram; PPDfam; PPO1810; LysE; 1. Complete proteome. SEQUENCE 207 AA; 22288 MW; 014AB6E422DC502B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            208 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          173 LWIKGPKOMKALNKIFGSLFMLVGALLAS 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ruegeria sp. PR1b.
Plasmid pSD25.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QBKWB0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OBKW80
  R R R R R S S
                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ≿
```

Search completed: March 24, 2004, 21:16:11 Job time : 48 secs